CHAPTER 4
MACHINE GUN MARKSMANSHIP TRAINING

This chapter aids trainers in preparing and conducting machine gun marksmanship training for the machine gun. Machine gun marksmanship training is conducted in three phases: preliminary gunnery, basic gunnery, and advanced gunnery in Chapter 5.

Section I. INTRODUCTION

Marksmanship begins with nonfiring individual skill proficiency and concludes with collective proficiency firing under demanding conditions.

4-1. OBJECTIVES

The objectives of machine gun marksmanship training are to produce gunners that are thoroughly capable of the following:

a. **Accurate Initial Burst**. Obtaining an accurate initial burst of fire on the target is essential to good marksmanship. This requires the gunner to estimate range to the target, set the sights, and apply the fundamentals of marksmanship while engaging targets.

b. **Adjustment of Fire**. The gunner must observe the strike of the rounds when the initial burst is fired. If not on target, he manipulates the T&E mechanism until the rounds do strike the target. The assistant gunner must be proficient in observing the strike of rounds and in observing and using tracers so the gunner can rapidly relay the machine gun on the target for engagement.

c. **Speed**. Speed is also essential to good marksmanship; it is attained by practice in both dry-fire and live-fire exercises. It is an acquired skill gained through extensive training that combines other skills when delivering fire. Speed should not be stressed to the detriment of accuracy.

4-2. TRAINING PHASES

Marksmanship training for the machine gun is progressive in nature. It begins with nonfiring individual skill proficiency and concludes with collective proficiency firing under demanding conditions. Gunners and leaders must master the fundamentals before attempting individual and collective firings. More effective and efficient marksmanship occurs if live firing is preceded with good preliminary marksmanship training. Likewise, proficient individual firing will achieve more proficient collective firing.

a. **Preliminary Gunnery.** In this phase, the gunner learns and demonstrates proficiency on individual skills that prepare him to fire live ammunition. This includes mastering mechanical training, the four fundamentals of marksmanship, T&E manipulation, sight adjustments, crew drill, and fire commands.

b. **Basic Gunnery**. In this phase, the gunner applies the fundamentals in live-fire exercises during day and night conditions. This includes zeroing, 10-meter firing with crew drill, field zeroing, and transition firing with crew drill.

c. **Advanced Gunnery.** In this phase, gunners are trained on combat techniques of fire, techniques of employment, and live-fire exercise during NBC conditions.

4-3. TRAINING STRATEGY

Training strategy involves the overall concept for integrating resources into a program that trains individual and collective skills needed to perform a wartime mission. The goal of a marksmanship program is to produce well-trained gunners who can win and survive on the battlefield.

a. Leaders implement training strategies for machine gun marksmanship in TRADOC institutions (IET, NCOES, IOBC, and IOAC) and in units. The overall training strategy is multifaceted and is inclusive of the specific strategies used in institution and unit programs. Also included are the supporting strategies that use resources such as publications, ranges, ammunition, training aids, devices, simulators, and simulations. These strategies focus on developing critical soldier skills and leader skills that are required for the intended outcome.

b. The training strategies contain two components: initial training and sustainment training. Both may include individual and collective skills. Initial training is critical because a task that is taught correctly and learned well is retained longer. When an interim of nonuse occurs, well-trained skills are more quickly regained and sustained. The more difficult and complex the task, the harder it is to sustain the skill. Personnel turnover plays a major factor in the decay of collective skills, since the loss of critical team members requires retraining to regain proficiency. Retraining becomes necessary when a long period elapses between initial and sustainment training sessions or when the training doctrine is altered.

c. The training strategy for machine gun marksmanship begins in the institutions and continues in the unit. Figure 4-1, illustrates an example of this overall process, which provides a concept of the flow of unit sustainment training. Combat arms IET provides field units with soldiers who are familiar with standards in basic marksmanship tasks. The soldiers graduating from these courses have been trained to maintain their machine guns and to hit a variety of targets. They have learned range determination, target detection, application of marksmanship fundamentals, and other skills needed to engage a target.

d. Additional skills trained in the institution include techniques for employment, classes of fire, and fire commands. These skills must then be reinforced in the unit. Related soldier skills of camouflage, cover and concealment, maneuver, and preparation and selection of a fighting position are addressed in STP 21-24-SMCT, which must be integrated into tactical training.

e. Training continues in units on the basic skills taught in combat arms IET. Additional skills, such as suppressive fire and supporting fire, are trained and then integrated into collective training exercises, which include squad and platoon live-fire exercises. (A unit machine gun marksmanship training program is explained in Appendix B.) The strategy for sustaining the basic marksmanship skills that is taught in combat arms IET involves periodic preliminary gunnery, followed by 10-meter, transition firing, and qualification range firing. However, a unit must establish a year-round program to sustain skills. Key elements include training the trainers and refresher training of nonfiring skills.

f. In the unit, individual proficiency and leader proficiency of marksmanship tasks are integrated into collective training that includes squad, section, and platoon drills and STXs. The collective tasks in these exercises, and how they are planned and conducted,

are in ARTEP 7-8-MTP and ARTEP 7-8-DRILL. Collective tasks are evaluated to standard and discussed during leader and trainer after-action reviews. Objective evaluations of both individual and unit proficiency provide readiness indicators and future training requirements.

g. A critical step in the Army's overall marksmanship training strategy is to train the trainers and leaders first. Leader courses include limited machine gun training, but unit publications will help develop officer and NCO proficiency necessary to plan and conduct gunnery training and to evaluate the effectiveness of their programs. Proponent schools provide training support materials to include field manuals, training aids, devices, simulators, and programs that are doctrinal foundations and guidance for training the force.

h. Once the soldier understands the weapon, knows how to zero, and has demonstrated proficiency at 10-meter and transition ranges, he should be exposed to more difficult ranges and scenarios.

i. IET culminates in the soldier's proficiency assessment, which is conducted on the 10-meter and transition and record fire ranges. Unit training culminates in a collective, live-fire, tactical exercise that provides an overview of unit proficiency and training effectiveness.

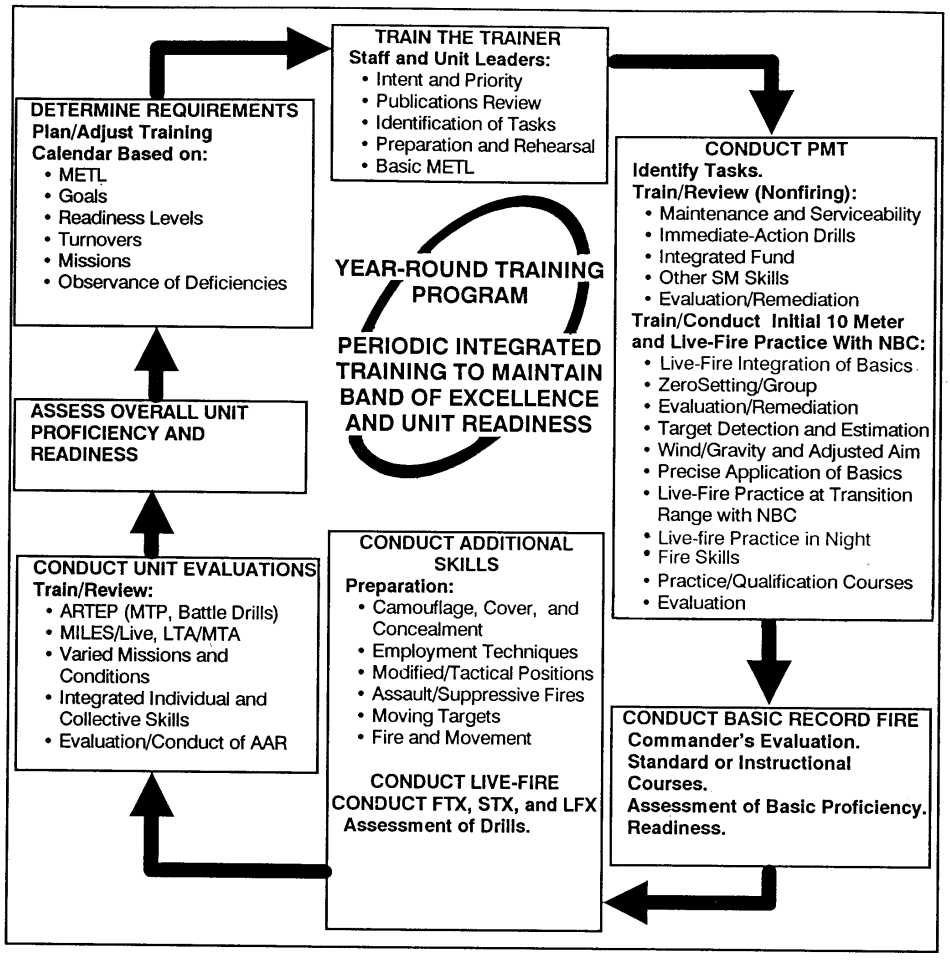

Figure 4-1. Unit marksmanship sustainment strategy.

4-4. TRAINING FOR COMBAT CONDITIONS

The trainer must realize that qualification is not an end but a step towards reaching combat requirements. To reach this goal, the gunner not only considers his position and the use of his weapon, but also some of the following combat conditions as well.

a. Most engagements will be within 300 meters; however, the gunner must still engage targets out to the maximum range of the machine gun.

b. Enemy personnel are seldom visible except when assaulting.

c. Most combat fire must be directed at an area where the enemy has been detected or where he is suspected of being but cannot be seen. Area targets consist of objects or outlines of men irregularly spaced along covered and concealed areas (ground folds, hedges, borders of woods).

d. Most combat targets can be detected by smoke, flash, dust, noise, or movement, but the targets are only visible for a moment.

e. Some combat targets can be engaged by using reference points, predetermined fire, or range card data.

f. The nature of the target and irregularities of terrain and vegetation may require a gunner to move from one position to another to place effective fire on the target. The most stable position for the gunner is the prone tripod-supported position.

g. Most combat targets have a low contrast outline and are obscured. Therefore, choosing an aiming point in elevation is difficult.

h. Time-stressed fire in combat can be divided into three types: a single, fleeting target that must be engaged quickly; distributed targets that must be engaged within the time they remain available; and a surprise target that must be engaged at once with instinctive, accurate fire.

SECTION II. PRELIMINARY GUNNERY

Once a soldier is proficient in the characteristics and mechanical training of the machine gun, he is ready to be trained on the four fundamentals of marksmanship. As the gunner learns the fundamentals, he should be required to manipulate the sights, use his body to shift and lay the sights on the target, use the T&E mechanism to lay on the target, conduct crew drill, and respond to fire commands. Dry-fire exercises are an excellent method for training to proficiency.

4-5. MARKSMANSHIP FUNDAMENTALS

The four fundamentals for firing are the same for all machine guns, they are *steady position*, *aim*, *breath control*, and *trigger control*.

a**. Steady Position**. In automatic fire, position is the most important aspect of marksmanship. If the gunner has a good zero, correctly aims his weapon, and properly applies a steady hold in firing a burst of automatic fire, the first round of that burst hits the target at the point of aim. However, this procedure is not necessarily true of the second and third rounds. The first round hits the aiming point the same as when a round is fired singularly. The recoil from the first and subsequent rounds progressively disturb the lay of the weapon with each round of the burst. The relationship between the point of impact of the first and subsequent rounds of the burst depends on the stability of the gunner's position. His body, directly behind the weapon, serves as the foundation, and his grip serves as a lock to hold the weapon against the foundation. The better the body

alignment and the steadier the grip, the less dispersed the rounds of a burst of automatic fire will be.

b. **Aim.** To aim the machine gun, the gunner must align the sights, focus his eye, obtain a correct sight picture, control his breathing, and maintain trigger control.

(1) *Sight Alignment*. To obtain correct align, the gunner centers the front sight post in the aperture of the rear sight. For a correct sight picture, the gunner centers the target over the front sight post so that it appears to rest lightly on top of the sight. The aspects of obtaining an accurate initial burst through sight alignment and sight picture, trigger manipulation, and zeroing are the same for tripod training as for bipod training

(2) *Focus of the Eye*. A good firing position places the eye directly on line with the center of the rear sight. The gunner must focus on the tip of the front sight post. The natural ability of the eye to center objects in the rear sight and to seek the point of greatest light aids in providing correct sight alignment.

(3) *Sight Picture*. A correct sight picture has the target, front sight post, and rear sight aligned. The sight picture consists of sight alignment and placement of the aiming point on the target. The gunner aligns the front sight post in the center of the rear sight and then aligns the sights with the target. The top of the front sight post is aligned on the center base of the target (Figure 4-2).

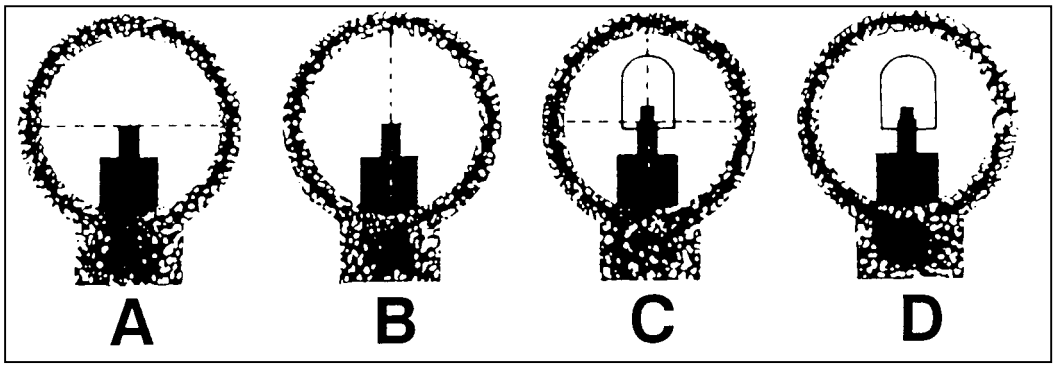

Figure 4-2. Sight picture.

c. **Breath Control**. When firing in bipod-mounted mode, two types of breath control are used. When firing single shots, as in zeroing, the gunner stops breathing after most of the air has been exhaled during the normal breathing cycle. He fires before he feels any discomfort. During automatic fire, ideally, the gunner exhales and stops his breath when pressing the trigger. He does not have time to take deep breaths between bursts. He must hold his breath before each burst or adapt his breathing by taking quick shallow breaths or taking deeper breaths between several bursts.

d. **Trigger Control**. Pressing the trigger straight to the rear and releasing it helps control the number of rounds in each burst and prevents disturbing the lay of the weapon. For this the gunner must learn how to manipulate the trigger so, that he may get the desired burst he wishes to obtain.

4-6. FIRING POSITIONS

The bipod-supported prone and fighting positions and the tripod-supported prone and fighting positions are covered in preliminary gunnery.

a. **Prone Position, Bipod-Supported.**

(1) Assume a prone position to the rear of the weapon (place the shoulder rest on your firing shoulder for the M249 and M60 only). An imaginary line drawn through the weapon should bisect the firing shoulder and buttock, and continue through the heel of your foot.

(2) Spread your legs a comfortable distance apart with your heels as close to the ground as possible, yet comfortable.

(3) Grasp the pistol grip with your firing hand. Place the fleshy end of the index finger resting lightly on the trigger. Place your nonfiring hand on the small of the stock with your thumb is curled underneath. Then slide your nonfiring hand forward until your little finger touches the receiver, so your aiming point will always be the same.

(4) Place your cheek against the forefinger of your nonfiring hand to form a stock weld. Try to position your nonfiring hand and cheek at the same spot on the stock each time you fire the weapon. The stock weld should provide for a natural line of sight through the center of the rear sight aperture to the front sight post and to the target. Relax your neck so that your cheek rests on your forefinger naturally.

(5) Apply a firm, steady pressure rearward and down, holding the weapon tightly into the hollow of your shoulder while aiming and firing.

(6) Keep your shoulders level and elbows about an equal distance from the receiver of the weapon (Figure 4-3).

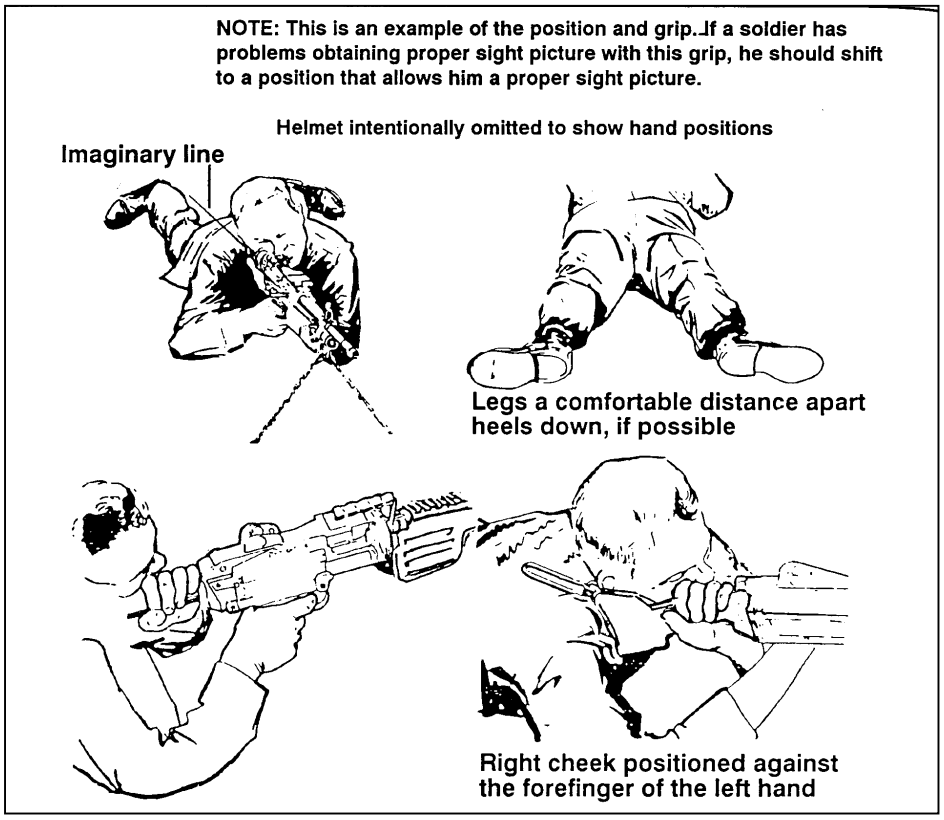

Figure 4-3. Prone position, bipod-supported.

NOTES: 1. The assistant gunner assumes a prone position along the left side of the gunner to load ammunition and observe.
2. Left-handed firing with the M249 and M60 is discouraged because the ejection pattern of some weapons is almost directly to the rear. When firing any machine gun using the tripod, the gunner must use his left hand to manipulate the T&E mechanism, therefore precluding the gunner from firing the machine gun left handed.
3. If a gunner has problems obtaining a proper sight picture, he should shift to a position that allows him to do so.

b. **Fighting Position, Bipod-Supported.** This is an excellent position that provides a stable firing platform. The depth of the fighting position and the support should be adjusted for the height and arm length of the gunner. This allows for a steadier position.

(1) Extend the bipod legs and place the machine gun in front of the position.

(2) Place your right (firing side foot) foot sideways against the rear of the fighting position and lean forward until your chest is squarely against the forward wall.

(3) Raise the folding shoulder rest and place it on your firing shoulder (M249 and M60 only). Keep your shoulders level or parallel to the ground.

(4) Grasp the pistol grip with your firing hand. place the fleshy end of the index finger resting lightly on the trigger. Place your nonfiring hand on the small of the stock and ensure that your thumb is curled underneath.

(5) Place your cheek against the forefinger of your nonfiring hand to form a stock weld. Try to position your nonfiring hand and cheek at the same spot on the stock each time you fire the weapon. The stock weld should provide for a natural line of sight through the center of the rear sight aperture to the front sight post and to the target. Relax your neck so that your cheek rests on your forefinger naturally.

(6) Apply a firm, steady pressure rearward and down, holding the weapon tight into the hollow of your shoulder while aiming and firing.

(7) Keep your shoulders level and elbows about an equal distance from the receiver of the weapon (Figure 4-4).

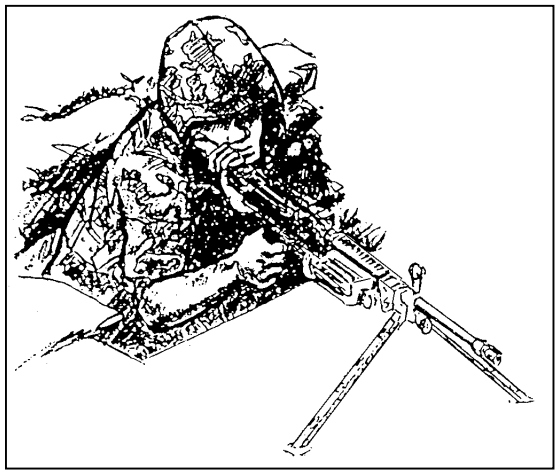

Figure 4-4. Fighting position, bipod-supported.

c. **Prone Position, Tripod-Supported**. The gunner assumes a prone position to the rear of the weapon (place the shoulder rest on your firing shoulder for the M249 and M60 only). An imaginary line drawn through the weapon should bisect the right shoulder and buttock and continue through the heel of his foot. When using the tripod, the assistant gunner assumes a prone position along the left side of the gunner to load ammunition and observe.

(1) The gunner, spreads his legs a comfortable distance apart with his heels as close to the ground as possible and still be comfortable.

(2) Grasps the pistol grip with his right hand with the fleshy end of his index finger resting lightly on the trigger. (The machine gun is not fired left-handed with the tripod because turning the traverse handwheel with the right hand is difficult.)

(3) Grasps the elevating handwheel with his left hand, palm down. Exerts a firm downward pressure with both hands while aiming and firing.

(4) Places both elbows on the ground between the tripod legs and his body. The position of his elbows raises or lowers his body in relation to the machine gun.

(5) Places his shoulder lightly against the stock without applying any pressure.

(6) Rests his cheek lightly (if at all) against the stock (Figure 4-5).

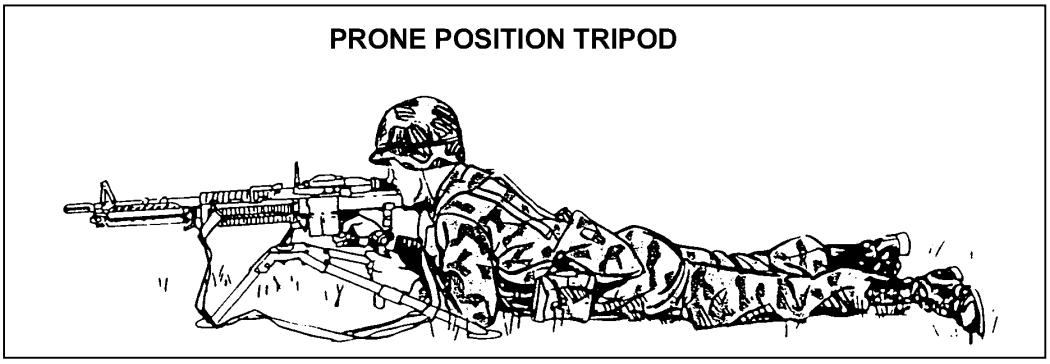

Figure 4-5. Prone position, tripod-supported.

d. **Fighting Position, Tripod-Supported.** (Figure 4-6.) The gunner places his right (firing side) foot sideways against the rear of the fighting position and leans forward until his chest is squarely against the wall.

(1) The gunner, grasps the pistol grip with his firing hand with the fleshy end of his index finger resting lightly on the trigger.

(2) Places his left hand on the elevating handwheel, palm down, exerting a firm downward pressure to make either minor or major adjustments in deflection or elevation. (The weapon is stabilized by the support of the tripod.)

(3) Places his elbows on the inside and does not touch the tripod.

(4) Places little or no pressure against the stock of the gun.

(5) Rests his cheek lightly, if at all, against the stock.

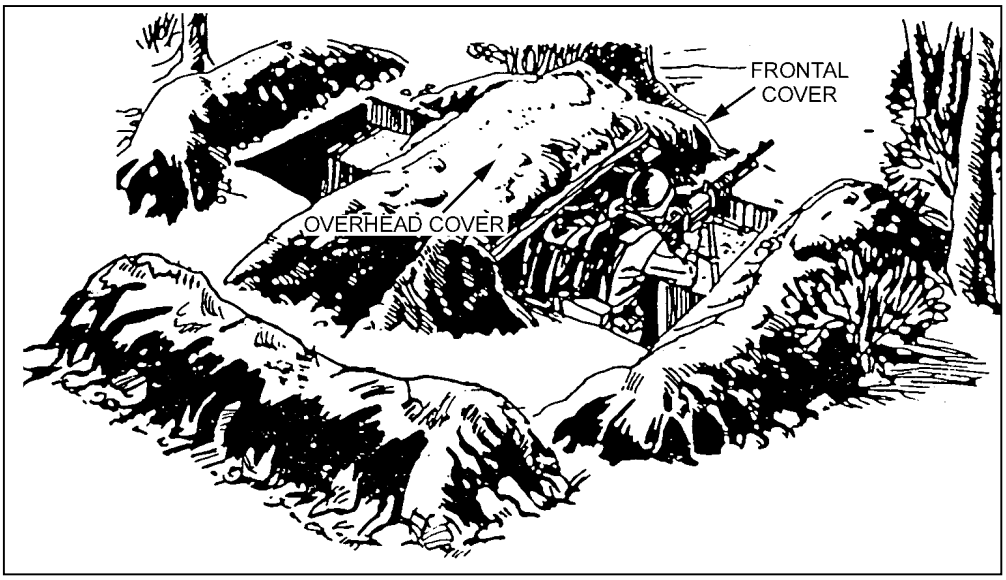

Figure 4-6. Fighting position, tripod-supported.

4-7. NIGHT FIRE

Although the same four fundamentals of marksmanship are used for night firing, adjustments must be made to accommodate the night vision devices.

a. **Bipod**.

(1) *Steady Position.* When firing unassisted, changes in head position and stock weld are necessary especially when using weapon-target alignment techniques. Normally, the gunner positions his head so that he can align the weapon on the target and look over the sights. In some cases, the lower part of his jaw makes firm contact with his nonfiring hand on the stock, with his eyes an inch or so above the sights. The key is to use the natural pointing ability to align the machine gun on the target. When using NVDs, the head position and stock weld must be altered to be able to use the device. Sometimes height of the NVD may make this impossible. NVDs alter the machine gun's weight and center of gravity. The gunner must compensate by exerting greater pressure and control with his firing hand on the pistol grip and his nonfiring hand on the stock.

(2) *Aim.* Various modifications are necessary when aiming the machine gun at night. When firing unassisted, the gunner uses off-center vision instead of pinpoint focus. Both eyes are open and focused downrange on the target and not on the sights. Rather than aim using the sights, the gunner looks over the sights and points the machine gun where he is looking. The normal tendency is to fire high so the gunner must improve weapon-target alignment by pointing slightly low to compensate. When using NVDs, the gunner uses the necessary aiming process to use the device.

(3) *Breath Control*. This fundamental is not affected by night firing conditions; however, wobble is more pronounced when using NVDs, because they magnify the field of view.

(4) *Trigger Control.* There is no change to this fundamental during night firing. The objective is to not disrupt alignment of the weapon with the target.

b. **Tripod.**

(1) *Steady Position*. When firing at predetermined targets with the weapon laid on each target, there are not differences in steady position at night as compared to day. However, firing at night at targets of opportunity requires modifications. The gunner is required to use weapon-target alignment techniques. He must align the weapon on the target and look over the sights. His head is higher and his lower jaw is lightly on the stock if at all. With night vision devices, the gunner must position his head so that his firing eye is in line with the device.

(2) *Aim*. For targets of opportunity, the gunner uses the same techniques as with a bipod during night firing except weapon-target alignment is achieved with the T&E mechanism.

(3) *Breath Control*. There are no changes in this fundamental.

(4) *Trigger Control*. There are no changes in this fundamental.

4-8. NUCLEAR, BIOLOGICAL, CHEMICAL FIRE

The four fundamentals remain valid in an NBC environment, although some modifications may be needed to accommodate the equipment.

a. **Bipod**

(1) *Steady Position.* The bulk of overgarments may require adjustments to the position for stability and comfort. A consistent stock weld is difficult to maintain because of the shape of the protective masks. The gunner has to hold his head in an awkward position to see through the sight. If necessary, he may cant the weapon to overcome this situation. This procedure relieves the neck muscles and places the eye on line with the center of the rear sight.

(2) *Aim*. The gunner may have to rotate (cant) the machine gun to see through the rear sight aperture. He should rotate only enough to align the sights, and only if necessary. Ballistics cause rounds to impact low in the direction of the cant at long ranges. If canting at targets beyond 175 meters, the gunner must adjust his point of aim. The best technique is to aim at center base of the target initially and then make adjustments based on the strike of the rounds. Right-handed firers adjust point of aim to the right and high; left-handed firers to the left and high.

(3) *Breath Control*. Although breathing is somewhat restricted and more difficult while wearing the protective mask, the impact is negligible. Care must be taken, to avoid hyperventilating during burst fire. The amount of oxygen inhaled by taking quick shallow breaths or deeper breaths between bursts is significantly reduced.

(4) *Trigger Control*. Trigger control is affected when the gunner wears gloves. The effect cannot be accurately predicted for each soldier; therefore, practice and training under these conditions are required.

b. **Tripod**.

(1) *Steady Position*. Modifications are similar to those in bipod firing. There are two other points of importance. Manipulating the T&E with gloves on is more difficult because the feel of the handwheel differs. The gunner may not sense the same control as without gloves. Second, hearing is impaired. Together, reduced sense of touch and hearing impairment make T&E manipulations especially difficult. For these reasons, adjustments may be considerably slower.

(2) *Aim*. Unlike the bipod, the tripod does not allow the machine gun to be canted. This requires the gunner to position his head behind the stock to use the sight. Skilled gunners who make adjustments to the T&E quickly can confirm their sight picture and then look over the sights to observe the strike of the round while firing. This not only provides relief for the neck muscles but aids in making adjustments.

(3) *Breath Control*. Some considerations apply in the same way as with of the bipod; however, the stable platform of the tripod negates movement associated with breathing.

(4) *Trigger Control*. Like the bipod, control is different because the trigger feels different. Training familiarizes the gunner with the changes he must make while wearing gloves.

4-9. ENGAGEMENT OF MOVING TARGETS

The fundamentals used to hit moving targets are the same as those needed to hit stationary targets. However, the procedures to engage moving targets vary as the angle, speed, and range of the target varies. Targets moving directly at the gunner are engaged the same as a stationary target; there is no change in the application of the fundamentals. But fast-moving targets at varying ranges and angles do require changes in the application of steady position and aiming. (For aerial targets engagements, see Appendix C.)

a. **Leads**. To hit a moving target, the machine gun must be aimed ahead of the target far enough to cause the bullet and target to arrive at the same time at the same point. This distance is measured in target lengths. One target length as seen by the gunner is one lead. Leads are measured from the center of mass. Table 4-1 gives the amount of lead needed to hit a target moving at right angles, to the gunner, and at speeds and ranges indicated. The gunner makes adjustments as conditions change. If target speed is 7 1/2 mph, the amount of lead is half that shown on the table; at 30 mph, double that shown. The angle at which the target moves also changes the lead. If the target is moving on an oblique angle, only half the lead is required. For a target moving directly at the gunner, the aiming point is below the center base of the target depending on range and slope of the ground. For a target moving directly away from a gunner, the aiming point is above the center base of the target (Figure 4-7). Too much lead is better than too little because the target moves into the beaten zone, and observation of the strike of the rounds is easier in relation to the target.

SPEED	RANGE OF TARGET		
15 mph	300 meters	500 meters	900 meters
	1/2 X Target length	1 X Target length	2 X Target lengths

Table 4-1. Vehicle lead table.

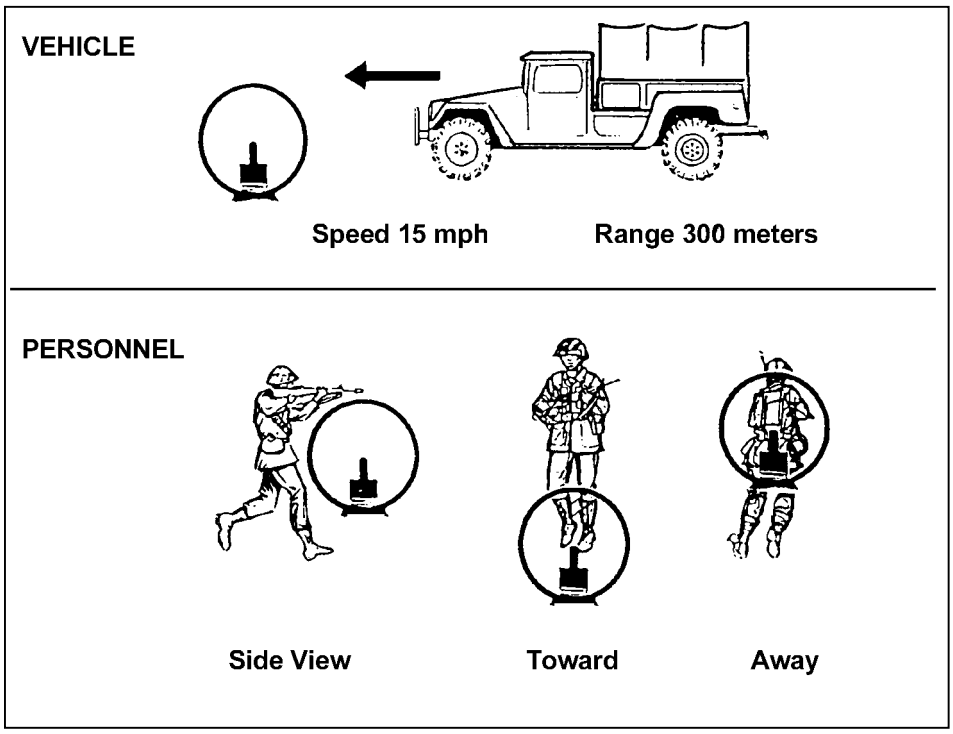

Figure 4-7. Moving-target aiming points.

NOTE: A soldier carrying a full combat load can run as fast as 8 mph for short distances on the battlefield.

b. **Tracking Techniques**. The gunner aims at a point ahead of the target equal to the estimated number of leads, maintains this lead by tracking the target (manipulates the weapon at the same angular speed as that of the target), and then fires. Tracking allows the gunner in position for a second burst if the first one misses.

c. **Trapping Techniques.** The gunner establishes an aiming point forward of the target and along the target path. He pulls the trigger as the target reaches the appropriate point in regard to lead.

d. **Position and Aim**.

(1) *Steady Position*. The gunner makes no change in position for targets moving directly toward or away from him. He manipulates the T&E mechanism to obtain the proper lead and sight picture. Some targets at varying speeds, angles, and ranges may require the gunner to reposition when in the prone position. The gunner redistributes his weight to his elbows and toes raising his body directly behind the weapon. He uses the T&E mechanism to traverse on to the target.

(2) *Aim.* The gunner uses the T&E mechanism to acquire the appropriate sight picture in relation to leading the target. He must quickly determine speed, angle, and range to the target, decide whether to track or trap, acquire lead, and engage the target. He uses the traversing handwheel to maintain lead.

(3) *Breath Control*. The gunner makes no change, but he must be quick to hold his breath because of the fleeting nature of moving targets.

(4) *Trigger Control*. The gunner makes no change in applying this fundamental.

e. **Bipod Techniques.** For targets moving to or from a gunner using a bipod, the same procedures are used. From a prone position, the gunner may be required to adjust his position quickly depending on range, angle, and speed of the target.

(1) *Steady Position*. If appropriate lead cannot be achieved by shifting his shoulders right or left (traverse) or by moving his elbows closer or farther a part (search), the gunner redistributes his weight to his elbows and toes and raises his body off the ground. Using his toes, the gunner shifts his body right or left in the opposite direction of the target and pivots on his elbows until the aiming point is well ahead of the target. The gunner rapidly assumes a steady position, obtains the sight picture, leads and engages the target. Trapping is the preferred technique. In order to apply this method, the bipod legs must move freely. When firing from a fighting position, the gunner must be flexible enough to track any target in his sector. If lead cannot be achieved, he slides the bipod legs in the appropriate direction (left or right) ahead of the target and continues as in the prone position. Trapping is still the preferred technique. If the terrain does not permit sliding the weapon left or right, the gunner lifts the bipod legs off the ground and places them where he can aim ahead of the target, reestablishes a steady position, and continues as before.

(2) *Aim.* The gunner determines angle, speed, and range quickly; acquires the appropriate lead; and engages the target. He aligns the front sight post in the proper position to lead the target. For targets moving directly away, he places the front sight post above center of mass. For targets moving directly at him, he aligns the front sight post below center of mass. For all other targets, he aligns the front sight with center base of the target applying the appropriate lead.

(3) *Breath Control*. The gunner must hold his breath quickly because of the fleeting nature of moving targets.

(4) *Trigger Control*. This is the same as for engaging stationary targets.

4-10. TRAVERSE AND SEARCH

The traverse technique moves the muzzle of the weapon to the left or right to distribute fire laterally. Search moves the muzzle up or down to distribute fire in depth.

a. **Tripod.**

(1) *Traverse*. To move the muzzle to the right, the gunner places his left hand on the traversing handwheel, thumb up, and pushes his thumb away from his body (right). To move the muzzle to the left, he pulls his thumb towards his body (left).

(2) *Search*. To move the muzzle up, the gunner grasps the elevating handwheel with his left hand and pushes his thumb away from his body (add). To move the muzzle down, he pulls his thumb towards his body (drop).

b. **Bipod.**

(1) *Traverse.* To make minor changes in direction, the gunner shifts his shoulders to the right or left to select successive aiming points in the target area. Major changes require him to redistribute his weight to his elbows and toes and raise his body off the ground. Using his toes, he shifts his body to the right or left to be in the opposite direction of the target, and pivots on his elbows until he is aligned with the target. The gunner rapidly assumes a steady position, obtains the proper sight picture, and engages the target.

(2) *Search.* To make changes in elevation, the gunner moves his elbows closer together to lower the muzzle or farther apart to raise the muzzle. He corrects gross errors in range by adjusting the range setting.

4-11. DIRECT LAY

The simplest, quickest, and most effective technique of delivering fire with the machine gun is to align the sights on the target and properly apply fire. This technique of fire is called *direct lay*.

4-12. APPLICATION OF FIRE

The gunner must aim, fire, and adjust on a certain point of the target. He always keeps the center of his beaten zone at the center base of the target for maximum effect from each burst of fire. When this procedure is done, bullets in the upper half of the cone of fire run through the target if it has height, and the bullets in the lower half of the beaten zone ricochet into the target.

4-13. FIRE ADJUSTMENT

The gunner initially sets his sights with the range to the target, lays on the target (sight alignment and sight picture on the center base of the target), fires a burst, and observes the strike of the rounds or flight of the tracers. When the initial burst is correct, he continues to fire until the target is covered. He must regain a good sight picture before each burst when using the bipod. When using the tripod, the gunner makes a rapid check of the sight picture after each traverse and search adjustment.

a. **Sight Corrections Method**. A gunner must observe and adjust fire rapidly to be effective. He observes bursts of fire by noting the strike of the rounds in the target area and the tracers in flight. The technique to adjust fire depends on time, range, and amount of adjustment. These factors assist the gunner in determining whether or not to make sight corrections or adjust position and point of aim. When the initial burst is not correctly placed, the gunner may change the elevation and windage on the sights and fire another burst on the target. This method is time-consuming, even for the well-trained soldier.

b. **Adjusted Aiming Point Method.** In this method of fire adjustment, the gunner uses his sight but does not make sight corrections. This method is quick. If the gunner misses the target with his initial burst, he must rapidly select a new aiming point the same distance from the target as the center of impact of the initial burst, but in the opposite direction. For example, if the initial burst is 20 meters beyond and 10 meters to the right of the target, the gunner rapidly selects an aiming point about 20 meters short and 10 meters to the left of the target, lays on that aiming point, and fires (Figure 4-8).

(1) When selecting a new aiming point from bipod mode, he may have to shift his shoulders slightly to the left or right for windage corrections. For elevation changes, he moves his elbows closer together (lowers the impact) or farther apart (raises the impact). For large corrections, he must move his elbows and realign his body to remain directly behind the weapon. He does this by redistributing weight to his elbows and toes and raises his body off the ground. He shifts his body using his toes, to the right or left, pivoting on his elbows until he is on line with the target. Then he assumes a steady position, obtains the sight picture, and engages the target.

(2) When selecting a new aiming point from tripod mode, the gunner may have to manipulate the T&E mechanism.

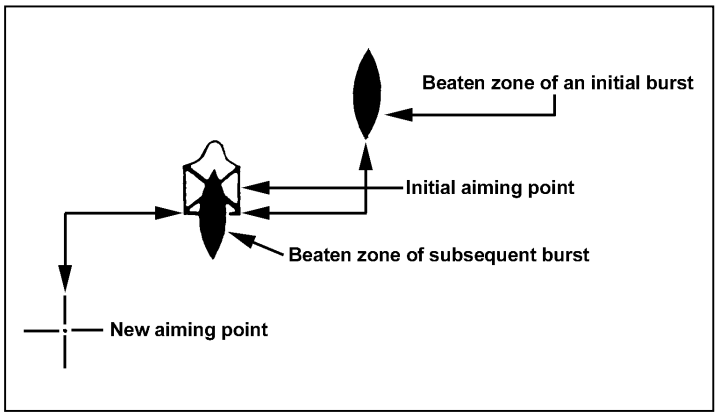

Figure 4-8. Adjusting aiming point method.

4-14. EFFECTS OF WIND

The effects of wind vary depending on changes in speed and direction. Wind is classified by the direction it is blowing in relationship to the firer and target line. The *clock system* is used to indicate wind direction and value (Figure 4-9).

a. **Clock System**. Winds that blow from the left (9 o'clock) or right (3 o'clock) are called *full-value winds*, because they have the most effect on the round. Winds that blow at an angle from the front or rear area are called *half-value winds*, because they have about one-half the effect on the round as full-value winds. Winds that blow straight into the gunner's face or winds that blow straight into the target are termed *no-value winds*, because their effect on the round is too small to be a concern. Effects of the wind increase as the range increases. (Figure 4-10) shows the effects of a 10-mph wind at varying ranges. A 20-mph wind doubles the effect. Winds at other than right angles have less effect. As indicated in Figure 4-10, wind has almost no effect up to 300 meters.

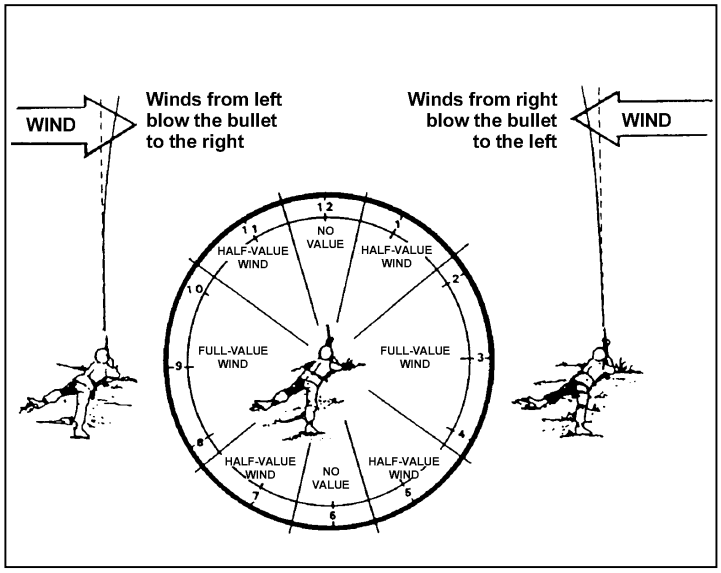

Figure 4-9. Clock method.

10-MILES PER HOUR WIND DRIFT	
RANGE IN METERS	INCHES (CM)
100	1 (2.54)
200	5 (12.70)
300	12 (30.48)
400	23 (53.42)
500	39 (49.06)
600	60 (152.04)
700	88 (223.52)
800	121 (307.34)
900	159 (403.86)
1,000 +	202 (513.08)

Figure 4-10. Effects of winds.

NOTE: When in doubt, the gunner aims the initial burst directly at the center base of the target and, using the techniques of observation and adjustment of fire, adjusts the fire onto the target.

b. **Wind Measurement**. Wind is highly variable and sometimes quite different at the firing position than at the target position. Even though the wind is blowing hard at the firing position, trees, brush, or terrain could protect the path of the round. The wind can vary by several miles per hour between the time a measurement is taken and when the round is fired. Therefore, training time should not be wasted trying to teach gunners an exact way to measure wind speed. They should know that even though wind can affect trajectory, it can be overcome by adjusting fire. A wind gauge can be used for precise measurement of wind velocity. When a gauge is not available, velocity is estimated by one of the following methods.

(1) *Observation Method.* The following information can assist in determining wind velocities.

(a) Winds under 3 mph can barely be felt, but the presence of slight wind can be determined by drifting smoke.

(b) Winds of 5 to 8 mph constantly move the leaves of trees.

(c) Winds of 8 to 12 mph raise dust and loose paper.

(d) Winds of 12 to 15 mph cause small trees to sway.

(2) *Pointing Method*. A piece of paper or other light material can be dropped from shoulder height. By pointing directly at the spot where it lands, the angle can be estimated. As shown in Figure 4-11, the angle is also divided by the constant number 4 to determine the wind speed in mph. However, this only indicates the conditions at the firing position; the conditions may be different at the target.

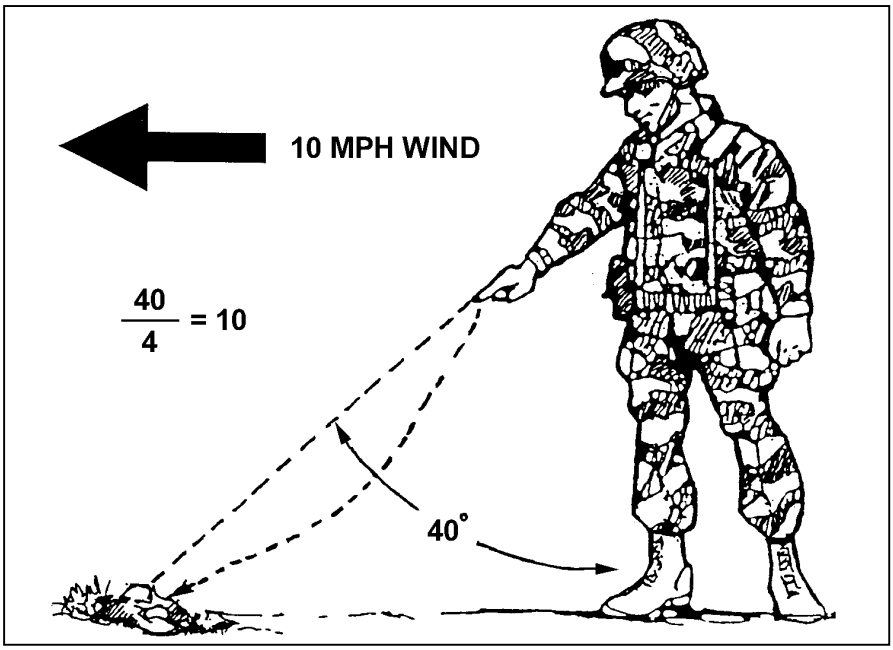

Figure 4-11. Pointing method.

4-15. FIRE COMMANDS

The standard fire commands are used as means of control during preliminary, basic, and advanced gunnery. The fire command must be explained to the gunner. The elements are given (as appropriate) before each dry-fire or live-fire exercise. The gunner takes action as directed and repeats each element as it is announced. (For a detailed explanation of fire commands, see Chapter 5.) When using the basic 10-meter range target, the fire command elements are as follows:

a. **Alert.** The alert is given as "Fire mission." Upon hearing the alert, the gunner loads his weapon and places the safety on “F”.

b. **Direction**. Direction is given as FRONT since the targets appear to the gunner's front on the basic range.

c. **Description**. Description is given as PASTER NUMBER (pasters 1 through 8 as appropriate), at which time the gunner lays his weapon on the announced paster.

d. **Range**. The elevation on the rear sight assembly is always used on the basic range. This is announced as FIVE HUNDRED or SEVEN HUNDRED, at which time the gunner must ensure that his rear sight assembly has the correct elevation setting.

e. **Method of Fire**. Firing on the basic range is at a point target, so the method of fire is announced as FIXED. The gunner fires either single rounds or bursts at a rate slower than the sustained rate; therefore, the rate-of-fire element is omitted.

f. **Command to Open Fire**. This is announced as AT MY COMMAND. When the gunner is ready, he announces "Up." When all gunners are ready to fire, the command FIRE is given.

4-16. DRY-FIRE EXERCISES

Dry-fire exercises train the techniques of loading, unloading, immediate action, remedial action, fundamentals of marksmanship, sight settings, and T&E manipulation.

a. **Ammunition**. These exercises may be conducted using blank or dummy ammunition and should be conducted using fire commands when appropriate. If the blank firing attachment is used, safety restrictions for its use must be enforced. While the gunner performs the tasks, the assistant gunner—

- Checks the sight setting and initial lay.
- Checks the gunner's position.
- Ensures the gunner simulates firing before adjusting his position.
- Checks for proper body adjustment or manipulation of T&E.
- Critiques the gunner at the end of the exercise.

b. **Loading and Unloading Exercises**. The procedures for loading and unloading are prescribed in Chapter's 1, 2 and 3. They should be reinforced using dummy ammunition. This training instills confidence and proficiency in the operation of the weapon. It also provides training in clearing the weapon.

c. **Immediate Action and Remedial Action Exercise**. This exercise is conducted using linked dummy rounds and the basic machine gun target. The instructor should use salvage links to link the dummy rounds together. The gunner—

(1) Loads the weapon with dummy ammunition and aims at one of the aiming pasters on the basic machine gun target.

(2) Being conscious of the sight picture, pulls the trigger and the bolt goes forward (simulate firing the weapon). If the sight picture is disturbed, checks his position and grip, and maintains better control of the weapon.

(3) If he has a stoppage, applies immediate action procedures and continues to fire.

(4) If immediate action has failed, applies remedial action procedures and continue to fire.

d. **Operational Exercise**. The gunner aims and simulates firing each dummy round at the aiming paster on the basic machine gun target.

(1) Observes the sight picture through the feeding, locking, and firing cycle. (This provides feedback on his ability to maintain and hold the sight picture.)

(2) If at the completion of the firing cycle there is significant movement of the sight picture, his position is not steady enough or the tripod is not stable.

(3) Applies immediate action after firing each shot to extract and eject the dummy cartridge, and returns the bolt to the cocked position. Returns the cocking handle to the forward position.

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

e. **Sight Setting and Sight Change Exercises**. These exercises are designed to train the gunner in the operation and adjustment of the rear sight, and making corrections in elevation and windage on the machine gun.

(1) For large adjustments in elevation (range), the gunner manipulates the rear sight to achieve different range settings. For fine adjustments in elevation, the gunner rotates the elevation knob for the machine gun.

(2) To make adjustments for windage, the gunner traverses the rear sight across the windage scale for the machine gun.

f. **Practice**. Before the dry-fire proficiency examination, soldiers should practice the tasks until they become proficient.

g. **Traversing and Searching Exercise**. After the gunner knows the principles of sighting and aiming and can assume a satisfactory firing position, he learns how to make minor and major body position changes to obtain an accurate initial lay. He practices shifting the direction of the weapon to successive points by moving his body. The basic machine gun target is placed 10 meters from the weapon for this exercise.

(1) Makes adjustments for large shifts in direction by using his elbows-and-toes technique described earlier. Makes small changes in direction by adjusting his shoulders.

(2) Makes major elevation changes by adjusting the range setting on the rear sight. Makes minor elevation changes by adjusting his elbows.

(3) Traverses and searches the target by sighting on the initial aiming paster (number 5 or 6) and then shifting to each of the other pasters in order (5 through 6 or its reverse).

(4) Upon receiving a fire command, the gunner repeats the instructions, sets the sights, lays the weapon on the designated paster, assumes the correct position, and reports *up*.

(5) At the command FIRE, the gunner simulates firing two single shots, then shifts to the next paster and simulates firing until the exercise is complete.

h. **T&E Manipulation Exercise**. After the gunner understands the principles of sighting and aiming and can assume a satisfactory firing position, he is instructed in manipulating the tripod-mounted machine gun to obtain an accurate initial lay. He is taught to shift the direction of the weapon to successive points with proficiency. The basic machine gun target is placed 10 meters from the weapon for this exercise.

(1) Makes large shifts in direction by releasing the traversing slide lock lever and moving the slide to the right or left. Makes minor changes in direction by using the traversing handwheel. (One click on the handwheel moves the strike of the round 1 cm on the target.)

(2) Adjusts for elevation by rotating the elevating handwheel with his left hand.

(3) Traverses and searches the target by laying on the initial aiming paster (number 5 or 6) and then shifts to each of the other pasters in order (5 through 6 or its reverse). (All major shifts in traverse are accomplished by loosening the traversing slide lockding lever.) When shifting from pasters number 7 through 8 or 8 through 7, uses the traversing handwheel.

(4) Upon receiving the command, the gunner repeats the instructions, sets the sights, lays the weapon on the designated paster, assumes the firing position, and reports UP.

(5) At the command FIRE, the gunner repeats the command, simulates firing two single shots, then shifts to the next paster and simulates firing until the exercise is completed.

i. **Dry-Fire Proficiency (Performance) Examination**. A gunner must demonstrate skill in all the tasks of the dry-fire proficiency examination before he is allowed to

progress to 10-meter live firing. This examination emphasizes learning by doing. Proficiency is tested on a pass or fail basis. (The proficiency test is in Appendix B.)

j. **Remedial Training**. Remedial training must be given to soldiers who fail the performance objectives. Gunners who have passed the proficiency test may be used to assist in the training of soldiers having difficulty. Following retraining, the soldiers are retested in those tasks.

4-17. MULTIPURPOSE MACHINE GUN RANGE LAYOUT

The multipurpose machine gun range is used for conducting the 10-meter course as well as transition day, night, and integrated NBC firing. The firing area has 10 lanes. (Detailed setup and target configurations are described in TC 25-8. The layout is shown in Figure 4-12.) Personnel required for conducting the 10-meter range, as well as the transition firing, are the same, and they should perform the same duties for each training period. Local policy may dictate personnel requirements. The following are the minimum required personnel: OIC, NCOIC, safety officer or NCO, ammunition NCO, tower operator, lane NCOs, trainer and assistant gunners, or IAW TC 25-8. All personnel must adhere to safety rules IAW AR 385-63, local regulations, and Appendix D.

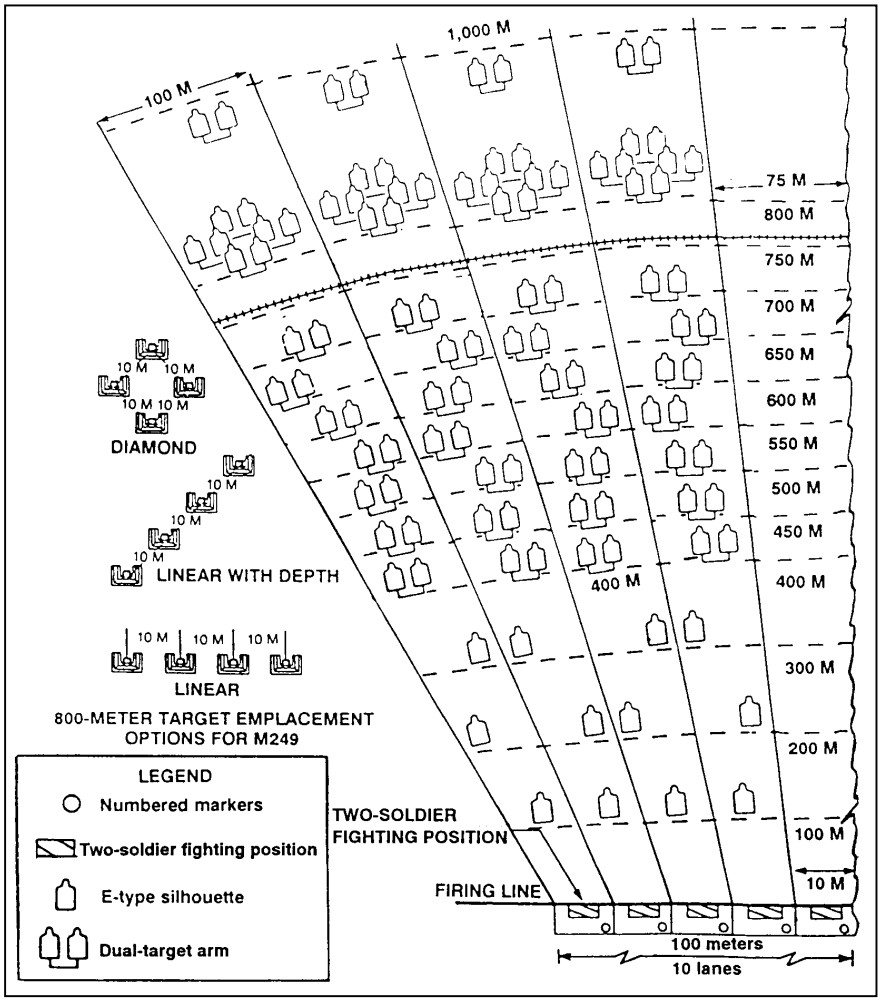

Figure 4-12. Multipurpose machine gun range layout.

NOTE: Targets beyond 800 meters are to be used with a machine gun optic and are not to be used during qualification without a machine gun optic.

4-18. BASIC MACHINE GUN TARGET

The basic machine gun target (FSN 6920-078-5128 and NSN 6920-00-078-5123) is used for the 10-meter firing exercise (Figure 4-13). The following explanation of the target, including the size of the aiming pasters and scoring spaces, aids in zeroing the machine guns and facilitates control during the 10-meter firing exercises. The target consists of four sections lettered A, B, C, and D. Each section has four point targets numbered 1, 2, 3, and 4; and two sets of area targets numbered 5 through 6 and 7 through 8. Each space is 4 cm wide and 5 cm high. The black aiming paster within the numbered scoring spaces is 1 cm square. The target is used to score one gunner—with one refire. Each gunner uses sections A, B and C. Sections C for qualification and section D for refire.

a. **Point Targets**. Point targets on the basic machine gun target are pasters 1 through 4 of sections A, B, C, and D. Firing at point targets exposes the gunner to zeroing techniques and controlled-burst fire techniques. Targets 1 through 4 can also be used for qualification.

b. **Area Targets**. Area targets on the basic machine gun target consist of pasters 5 through 6, and 7 through 8 of sections A, B, C, and D. Target group 5 through 6 provides the gunner with targets in depth and allows him to use a series of aiming points to disburse fire across the target by using the T&E mechanism. Target group 7 through 8 provides the gunner with linear targets with depth. This series of targets uses a series of aiming points to disburse fire across the target and in depth by using the T&E mechanism.

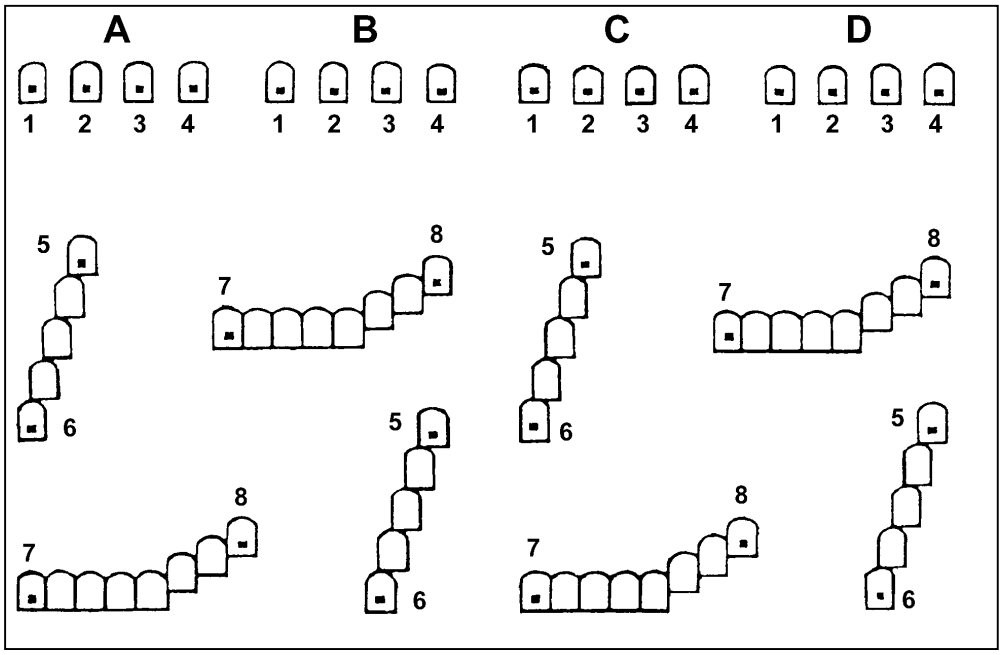

Figure 4-13. Basic machine gun target.

c. **Grid Square Overlay**. This device assists the gunner in zeroing his weapon at 10 meters, while using the basic machine gun target (Figure 4-14). The grid square overlay is used the same as an M16 25-meter zero target, except the material can be made of plastic or view graph transparency. Each square is equal to 1 cm.

1 CLICK = 1 CM. Turn the traversing handwheel to move the strike of the round left or right.
1 CLICK = 1 CM. Turn the elevation handwheel to move the strike of the round up or down.

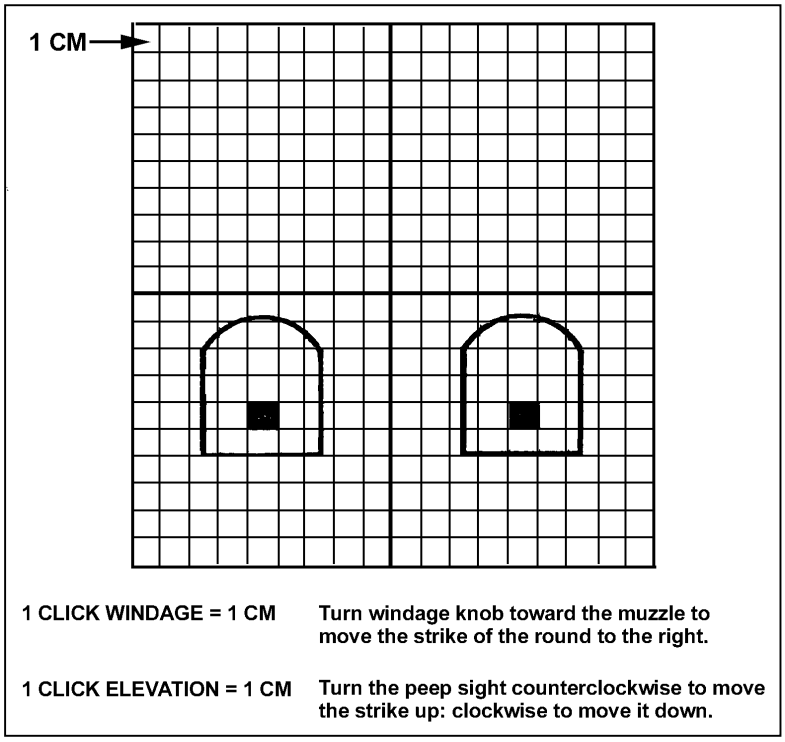

Figure 4-14. Grid square overlay.

(1) Sets the sights for 10-meter zeroing, then fires three single rounds to form a three-round shot group. Re-lays on the target using the T&E mechanism.

(2) After firing the three-round shot group (Figure 4-15), places the grid square overlay over the pasters (1 and 2) (Figure 4-16) and counts the number of clicks it will take for rounds to impact on the black aiming paster. (Corrections for Figure 4-16 would be turn the traverse handwheel to the right one click.)

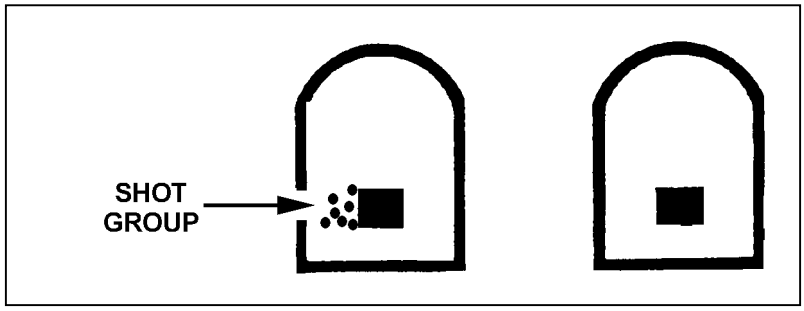

Figure 4-15. Shot group on basic machine gun target.

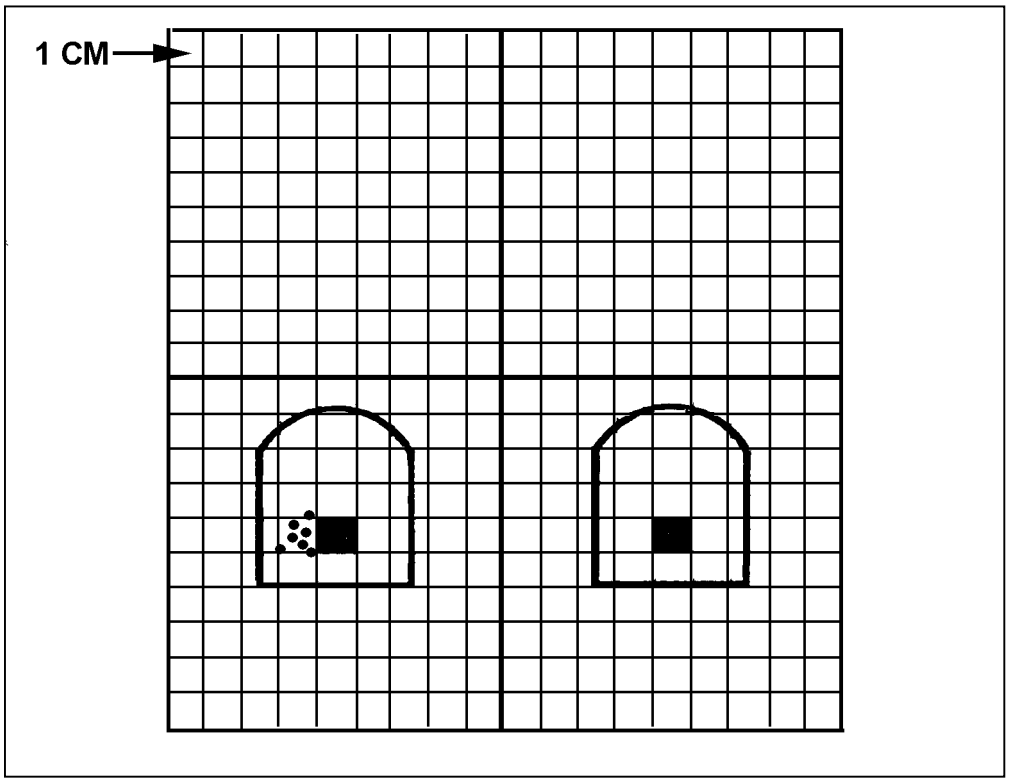

Figure 4-16. Overlay placed over pasters.

4-19. TARGET ANALYSIS

Targets are analyzed and scored to determine the gunner's proficiency and to reinforce the fundamentals of marksmanship. In a prone or fighting position firing with a zeroed weapon, a target is best analyzed by considering the common errors of machine gun marksmanship (Figure 4-17).

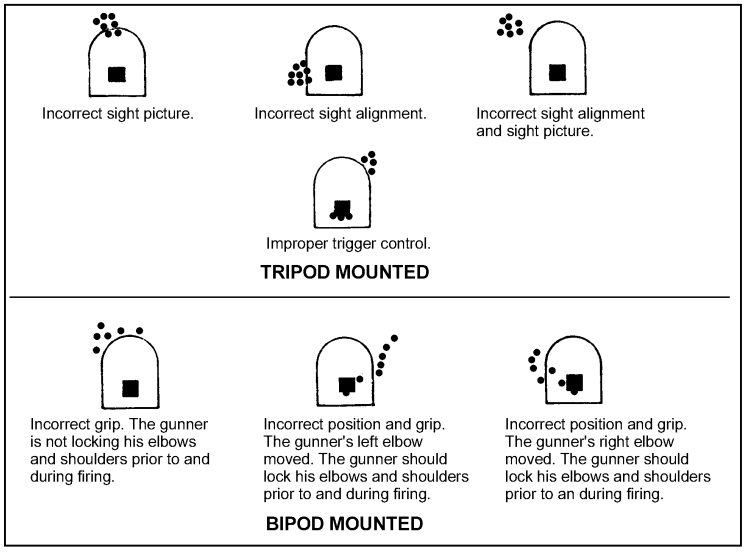

Figure 4-17. Common errors of marksmanship.

Section III. CREW DRILL

This section applies to all three machine guns and will be incorporated in *preliminary gunnery* and *basic gunnery*. The machine gun crew drill gives squad and platoon members training in the fundamentals of machine gun operation and confidence in their ability to put the machine gun into action with precision and speed. Rotation of duties during training ensures that every member becomes trained in the duties of each crew position. Precision is attained by learning and practicing correct procedures to include inspecting the machine gun before firing and observing safety procedures. Speed is acquired after precision has been developed. *Precision is never sacrificed for speed*.

4-20. PREPARATION

The crew drill will be conducted with preliminary gunnery and will be part of the 10-meter and transition firing practice and qualification, concurrently during other courses of fire, or anytime at the discretion of the unit commander. The organization for crew drill described in this section is for training crews in the fundamentals of machine gun operation; it is not the organization to be employed in every tactical situation.

a. To instill realism and relate the crew drill to actual situations, the unit leader should vary his method of instruction. Possible approaches to this method of instruction include the following:

- Conduct the crew drill from the prone position.
- Initiate the crew drill from all types of tactical formations.
- Perform the crew drill in simulated tactical situations.

b. The crew drill, as discussed here, involves the leader and one machine gun crew. The machine gun crew consists of three members (a gunner, assistant gunner, and an ammunition bearer). There are two complete machine gun crews in the light headquarters section of infantry, air assault infantry platoons, and airborne infantry platoons.

c. All commands are given by a leader. This leader may be a team leader, squad leader, or someone placed in charge of the crew. The gunner and assistant gunner repeat all commands. After the machine gun is mounted, the assistant gunner transmits all signals from the leader to the gunner and from the gunner to the leader.

4-21. CREW EQUIPMENT

In addition to individual weapons and equipment, crew members carry equipment for both bipod and tripod training. The following is a suggested assignment of the equipment to the machine gun crew members:

a. **Day Time Equipment**.

(1) Leader (designated)—binoculars, compass.

(2) Gunner—machine gun, compass, MGO or AN/PAS-13, two bandoleers (with dummy ammunition).

(3) Assistant Gunner—binoculars, spare barrel case (spare barrel and accessories), traversing and elevating mechanism, pintle assembly, and three bandoleers (with dummy ammunition).

(4) Ammunition bearer—compass, tripod and four bandoleers (with dummy ammunition).

b. **Night Time Equipment**.

(1) Leader (designated)—AN/PVS-7B with 3XMAG, compass.

(2) Gunner—machine gun, compass, AN/PVS-4 or AN/PAS-13, two bandoleers (with dummy ammunition).

(3) Assistant Gunner—AN/PVS-14 with 3XMAG, spare barrel case (spare barrel and accessories), traversing and elevating mechanism, pintle assembly, and three bandoleers (with dummy ammunition).

(4) Ammunition bearer—AN/PVS-7B with 3XMAG, compass, tripod and four bandoleers (with dummy ammunition).

4-22. FORMATION (BIPOD OR TRIPOD)

The leader commands FORM FOR CREW DRILL. The crew forms in a file with five steps between each crew member in this order: gunner, assistant gunner, and ammunition bearer. The gunner is five steps from and facing the leader. When the crew members reach their positions, each assumes the prone position and is ready for the crew drill. (Figure 4-18, page 4-26.)

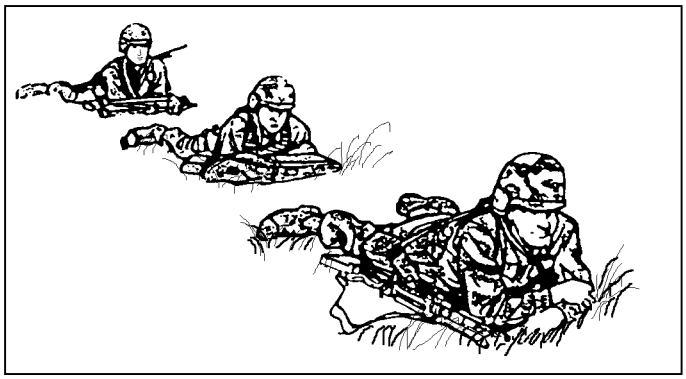

Figure 4-18. Crew in ready position.

4-23. CROSS-TRAINING PROCEDURES

Duties are rotated during the crew drill to train each soldier in the duties of all crew members. The command to rotate duties is FALL OUT, GUNNER. At this command, the gunner becomes the ammunition bearer, the assistant gunner becomes the gunner, and the ammunition bearer becomes the assistant gunner. When crew members have assumed their new positions, they call out their new duties in order: AMMUNITION BEARER, ASSISTANT GUNNER, GUNNER.

4-24. INSPECTION FOR BIPOD FIRE

An inspection of equipment is made at the beginning of each exercise.

a. **Command**. After the crew is formed for crew drill, the leader commands INSPECT EQUIPMENT BEFORE FIRING, BIPOD. At the command, each crew member inspects his equipment as explained below.

(1) *Inspection by Gunner*. The gunner inspects the ammunition first. He ensures that the ammunition is properly linked and free of dirt and corrosion, and that the double link is up (ready for loading). After he inspects the ammunition, he places the cloth slings over his shoulder (except for one bandoleer, which he prepares for loading). He then inspects the machine gun and takes his position parallel to the machine gun (his head on line with the feed tray). The night personnel also check the AN/PVS-4 or AN/PAS-13.

(a) Holding the machine gun with his left hand, using his right hand he lowers the bipod legs and then rest the machine gun on the bipod.

(b) Attaches the bandoleer to the machine gun.

(c) Places the safety on “F”, pulls the cocking handle to the rear, places the safety on “S”, returns the cocking handle to the forward position, raises the cover assembly.

(d) Calls for the cleaning rod and receives it from the assistant gunner.

(e) Crawls forward, then runs the cleaning rod through the barrel to ensure it is clear.

(f) Checks the flash suppressor for cracks.

(g) Checks the front sight for tightness and for damage to the blade.

(h) Checks the carrying handle to ensure that it can be positioned so it will not be in the way during aiming and firing.

(i) Ensures that the barrel is securely locked to the receiver.

(j) Returns the cleaning rod to the assistant gunner.

(k) Moves to the rear of the machine gun and checks the moving parts in the feed cover.

- Ensures that the feed cam is clean and properly lubricated.
- Pushes back and forth on the feed cam to check for freedom of movement.
- Pushes on the belt feed pawl to ensure that it has spring tension.
- Pushes on the cartridge guides to ensure that they a have spring tension.

(l) Pushes the belt holding pawl to ensure that it has spring tension.

(m)Lowers and latches the cover (without inserting the belt).

(n) Pulls the trigger to check the functioning of the safety.

(o) Places the safety on "F", pulls the cocking handle to the rear, pulls the trigger, eases the bolt forward manually with the cocking handle.

(p) Checks the rear sight.

(2) *Inspection by Assistant Gunner*. Remaining in a prone position, the assistant gunner begins by inspecting his ammunition. He takes the cleaning rod from the carrying case and assembles the cleaning rod. He then takes the traversing and elevating mechanism from the case and prepares it as follows. Night will also check AN/PVS-14 with 3X MAG.

(a) Rotates the elevating handwheel, exposing 1 1/2 inches or the width of two fingers) of threads above the elevating handwheel.

(b) Rotates the traversing slide sleeve, exposing 1 1/2 inches or the width of two fingers) of threads below the elevating handwheel.

(c) Centers the traversing mechanism.

(d) Checks the to ensure that the locking mechanism that attach to the machine gun are present and in working order.

(e) Replaces the traversing and elevating mechanism in on the case and removes the spare barrel from the spare barrel case.

(f) Checks the barrel.

(g) Checks the flash suppressor for cracks.

(h) Checks the front sight for tightness and for damage to the blade.

(i) Checks the pintle assembly for proper functioning.

(j) Places the spare barrel its case; disassembles the cleaning rod and returns it accessory pocket; and checks the ruptured cartridge extractor, bore brush, chamber brush, receiver brush, and heat protective mitten for serviceability.

(3) *Inspection by Ammunition Bearer*. Remaining in a prone position, the ammunition bearer inspects his ammunition as described above for gunner and assistant gunner. He then inspects the tripod, pintle assembly and T&E mechanism. Night personnel also check the AN/PVS-7 with the 3XMAG.

(a) Ensures that the front leg will unfold properly and the rear legs unfold and lock securely in place with the sleeve latch.

(b) Checks the sleeve latch to ensure that it has spring tension and will function.

(c) Checks the pintle assembly to ensure that it is locked into the pintle bushing and that the pintle rotates freely within the bushing.

(d) Checks to ensure that the T&E mechanism will lock on the traversing bar and move freely when unlocked for major changes in direction.

(e) Unlocks the pintle and T&E mechanism from the tripod and return to the assistant gunner.

(f) Folds the rear legs by unlocking the sleeve latch and folds the front leg so that the tripod is in the carrying position.

b. **Report**. When crew members have completed their inspection of the equipment, they call out their report, without command, starting from the rear.

(1) AMMUNITION BEARER CORRECT (or reports deficiencies).

(2) AMMUNITION BEARER AND ASSISTANT GUNNER CORRECT (or reports the ammunition deficiencies.

(3) GUNNER ALL CORRECT (or deficiencies found during the inspections).

4-25. PLACEMENT INTO ACTION (BIPOD)

To place the machine gun into action, the leader commands and signals MACHINE GUN TO BE MOUNTED HERE (pointing to the position where the machine gun is to be mounted), FRONT (pointing in the direction of fire), ACTION (raising fist to shoulder level and thrusting it several times in the direction of the selected position).

a. At the command ACTION, the gunner stands, grasps the carrying handle with his left hand, grasps the top of the stock with his right hand, raises the machine gun to a carrying position (muzzle to the front) and moves to the selected position.

b. Upon arrival at the position, the gunner places the machine gun on the ground. He then assumes a prone position to the rear of the machine gun, positions the carrying handle so that it will not interfere during aiming and firing, aligns the machine gun in the direction of fire, and set the rear sight. He places the safety on "F", pulls the bolt to the rear, places the safety on "S", and returns the cocking handle to the forward position. He then raises the feed cover, places the first round of ammunition in the cartridge feed tray groove, and closes the feed cover ensuring that the round does not slip out of the cartridge feed tray groove. He then places the machine gun to his shoulder and puts the safety on "F".

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

c. The assistant gunner times his movements so that he arrives at the position as the gunner is assuming the prone position. He lies prone on his left hip, feet to the rear, and on the left side of the gunner. He places the spare barrel case parallel to the gun with the zippered side towards the machine gun. He opens the case and removes the spare barrel. He places the spare barrel on the case, muzzle to the front and even with the muzzle of the machine gun. (Figure 4-19.)

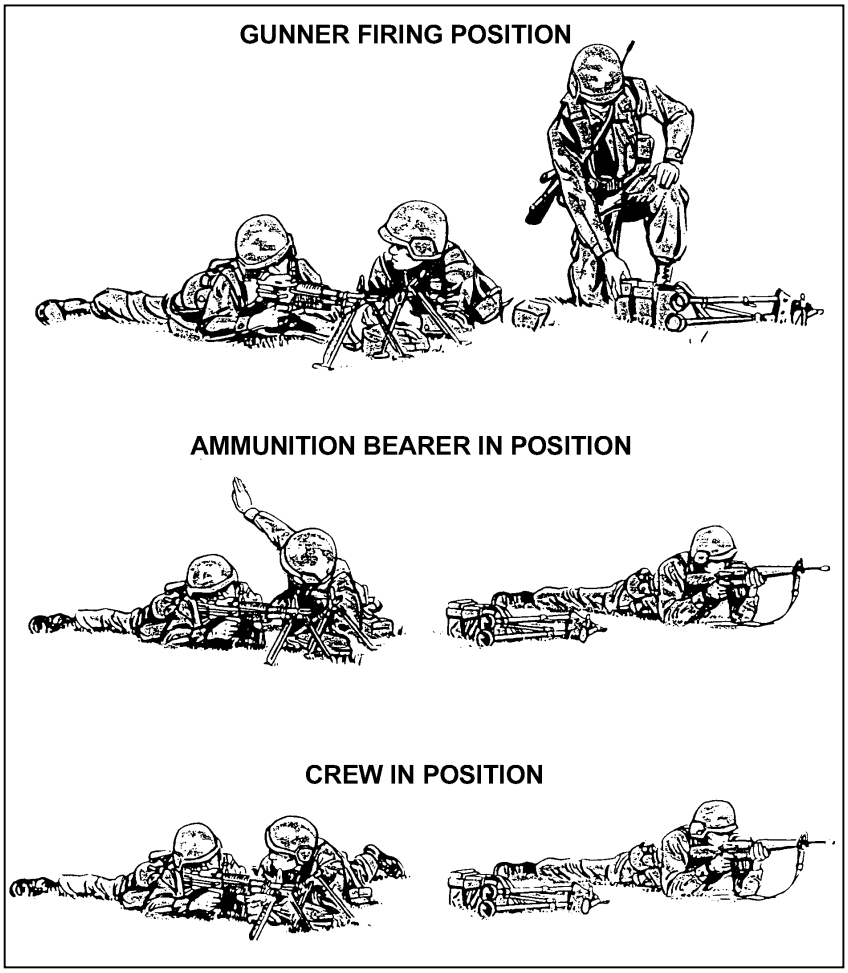

Figure 4-19. Crew members in firing position.

d. The ammunition bearer times his movements so that he arrives at the position as the assistant gunner is assuming the prone position. He places the folded tripod one step to the left of the muzzle of the machine gun and on line with the machine gun. He unslings his bandoleers and places them next to the folded tripod legs. He then lies prone 10 meters to the left and on line with the position, provides security, and prepares to fire into the target area with his rifle.

e. When ready to fire, the gunner puts the safety lever on "F" and reports UP. The assistant gunner signals READY to the leader.

4-26. PROCEDURES FOR CHANGING THE BARREL (BIPOD)

To ensure proficiency and speed in changing barrels, the barrel changing process is included in crew drill. When the gunner has reported UP and the assistant gunner has signaled READY, the leader commands CHANGE BARRELS.

a. The gunner ensures that the bolt is to the rear, puts the safety on "S", and puts the stock on the ground. Next, he moves his left hand to the top of the stock to ensure the weapon stays parallel to the ground. He puts his right hand under the handguard/forearm assembly help support the machine gun when the assistant gunner removes the barrel.

b. The assistant gunner (wearing the heat protective mitten) unlocks the barrel locking lever, removes the barrel, and places the barrel on the spare barrel case. He holds the spare barrel inserts it into the machine gun.

c. The gunner ensures that the barrel is lock and secured in the receive of the machine gun, moves the safety lever to “F”, assumes the correct firing position, and reports UP. The assistant gunner signals READY to the squad leader.

4-27. REMOVAL FROM ACTION (BIPOD)

To take the machine gun out of action, the leader commands and signals OUT OF ACTION. The gunner and assistant gunner repeat the command.

a. At the command OUT OF ACTION, the ammunition bearer moves to the position, slinging his rifle. He picks up and slings the bandoleers that he previously left there. He gets the tripod and moves 15 steps to the rear of the machine gun. He lies prone, facing the position with the tripod in front of him.

b. The assistant gunner places spare barrel and the heat protective mitten in the spare barrel case. Before standing, he closes the spare barrel case enough to retain the spare barrel and the traversing and elevating mechanism. He moves 10 steps to the rear of the position and lies prone, facing the position. At this time, he fully closes the spare barrel case.

c. The gunner places the stock on the ground, ensures that the bolt is to the rear, places the safety on “S”, and raises the feed cover. He removes the ammunition from the tray, puts it into the bandoleer, and closes the bandoleer. The gunner examines the chamber to ensure that it is clear; closes the feed cover; pulls the cocking handle to the rear; puts the safety on “F”; pulls the trigger, easing the bolt forward. Standing, he pivots on his right foot; without turning the machine gun, he raises it to his left hip and moves five steps to the rear. He visually checks to ensure that the ammunition bearer and the assistant gunner are in their positions. He lies prone, facing the position with the machine gun on his right. He folds the bipod legs alongside the barrel and reports UP to the squad leader.

4-28. INSPECTION FOR TRIPOD FIRE

The inspection of equipment for tripod training is the same as for bipod training except that the leader's command to start the inspection of equipment is INSPECT EQUIPMENT BEFORE FIRING TRIPOD. Also, the gunner inspects the bipod legs and folds them to their position alongside the barrel.

4-29. PLACEMENT INTO ACTION (TRIPOD)

The leader commands and signals MACHINE GUN TO BE MOUNTED HERE, FRONT, ACTION. (Figure 4-20.)

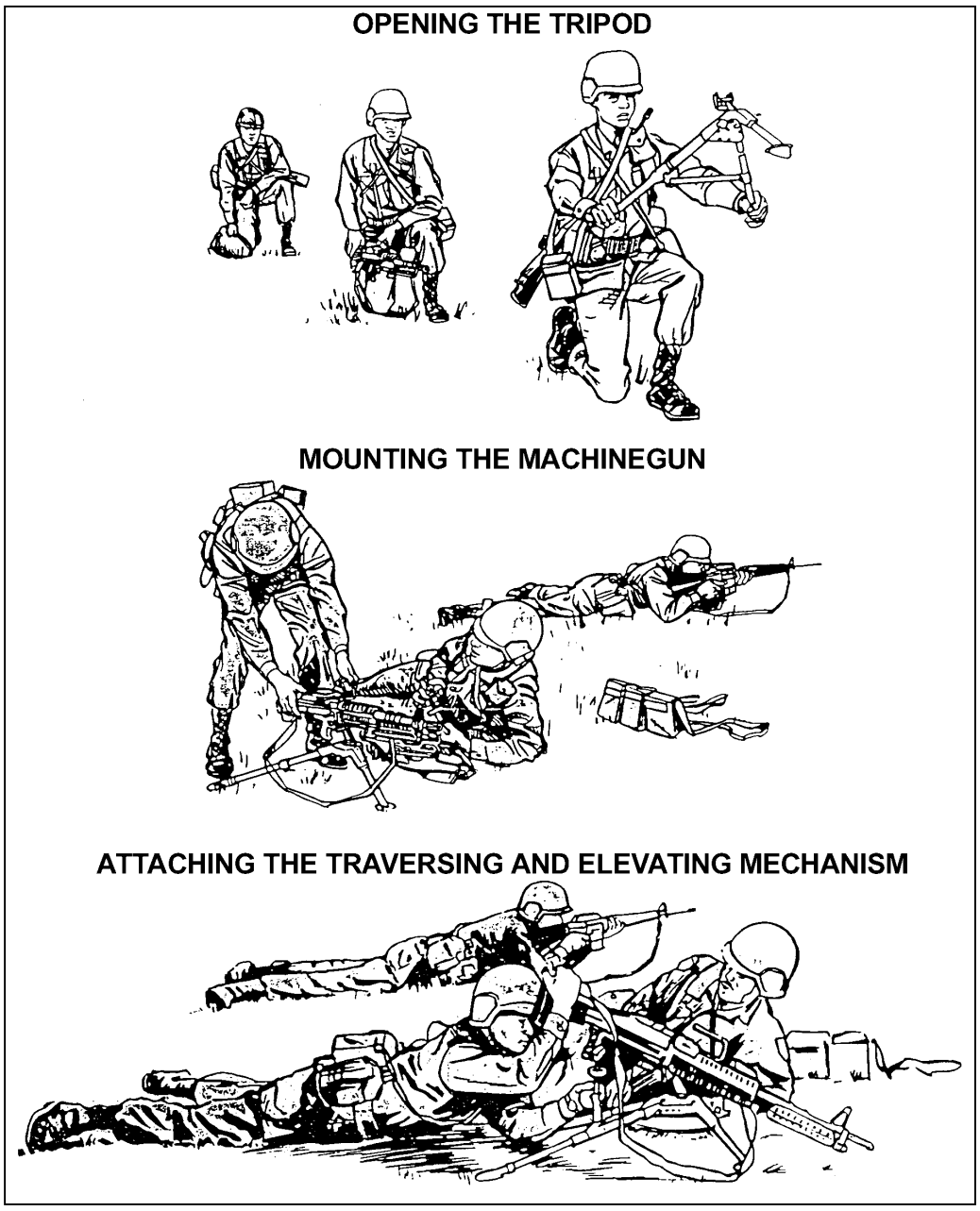

Figure 4-20. Placing the machine gun into action.

a. Upon the command ACTION, the ammunition bearer stands, holds the tripod with his right hand, and moves forward to the position. He kneels on his right knee and rests the shoes of the rear tripod legs on the ground, with the mount in a vertical position. Steadying the mount with his right hand near the tripod head, he raises the front leg with his left hand. He grasps the right shoe with his right hand and the left shoe with is left hand, and raises the tripod chest high. He separates the tripod legs with a quick jerk. Ensuring that the sleeve latch engages the sleeve, he places the tripod on the ground with the front leg pointing in the direction of fire. He rises to his feet and stamps the rear shoes

into the ground. He then unslings his bandoleers and places them on line with the front leg of the tripod, one step to the left. He moves 10 meters to the left of the position, unslings his rifle, lies prone, provides security, and prepares to fire into the target area.

b. The assistant gunner times his movements and arrives at the position as the ammunition bearer leaves. He places the spare barrel case (zippered side towards the tripod) parallel to and on line with the spot where the muzzle of the machine gun will be when it is mounted. He lies on his left side, with his hip near the left tripod shoe. He unzips the spare barrel case and removes the spare barrel, mounting equipment necessary to mount the machine gun. He places the spare barrel on the spare barrel case with the muzzle forward.

c. The gunner times his movements and arrives at the position as the assistant gunner assumes the prone position. He stands, holds the carrying handle in his left hand and the stock in his right hand, and raises the gun to the carrying position (muzzle to the front). He mounts the machine gun on the tripod. He then positions the carrying handle to the right so it will not interfere with aiming and firing, raises the rear sight assembly, and lies prone.

d. The assistant gunner assists the gunner in mounting the machine gun to the tripod. They ensure that both the pintle and traversing and elevating mechanism are securely locked in place and working properly.

e. The gunner places the safety on "F", pulls the bolt to the rear, places the safety on "S", and returns the cocking handle to the forward position. The assistant gunner places the first round of ammunition in the tray groove and supports the belt, while the gunner closes the cover. The gunner takes the correct position and grip, places the safety on "F", and reports UP. The assistant gunner signals READY to the squad leader.

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

4-30. PROCEDURES FOR CHANGING THE BARREL (TRIPOD)

When the gunner has reported UP and the assistant gunner has signaled READY, the leader commands CHANGE BARRELS.

a. The gunner ensures that the bolt is to the rear, puts the safety on "S". He also assists the assistant gunner in changing the barrel, if needed.

b. The assistant gunner (wearing the heat protective mitten) unlocks the barrel locking lever, removes the barrel, and places the barrel on the spare barrel case. He holds the spare barrel inserts it into the machine gun.

c. The gunner ensures that the barrel is lock and secured in the receiver of the machine gun, moves the safety lever to "F", assumes the correct firing position, and reports UP. The assistant gunner signals READY to the squad leader.

4-31. REMOVAL FROM ACTION (TRIPOD)

At the command OUT OF ACTION, the gunner ensures that the bolt is to the rear, places the safety on "S", and raises the cover. The assistant gunner removes the ammunition from the tray, returns it to the bandoleer, and closes the bandoleer. The gunner inspects the chamber to ensure that it is clear; closes the cover; pulls the cocking handle to the rear; puts the safety on "F"; pulls the trigger, easing the bolt forward. The gunner unlocks the rear of the machine gun from the tripod.

a. The assistant gunner will assist the gunner in dismounting the rear of the machine gun. He puts the spare barrel and heat protective mitten into the case and closes it enough to hold the contents. He stands, moves 10 steps to the rear of the position, and lies prone, facing to the front. After receiving all mounting equipment from the ammunition bearer, he puts it in the spare barrel case and fully closes the spare barrel case.

b. After the assistant gunner leaves, the gunner stands, lowers the rear sight, and holds the carrying handle with his left hand. With his right hand, he dismounts the front of the machine gun from the tripod. Holding the stock with his right hand, he pivots to his right as he raises the machine gun to the carrying position. He then moves five steps to the rear of the position and lies prone, facing to the front.

c. The ammunition bearer rises, slings his rifle, moves to the machine gun, and secures his bandoleers, timing his arrival so that the gunner and assistant gunner will be clear of the tripod. He grasps the tripod with his left hand and moves five steps to the rear of the position. He turns, facing the front, and kneels on his right knee. He places the tripod in a vertical position with the rear shoes on the ground and supports it with his right hand near the head of the tripod. At this time, he hands the assistant gunner all mounting equipment. He reaches up with his right hand down the right leg, and releases the sleeve latch. He then grasps the shoes and closes the tripod legs. He lowers the tripod to the ground, head to the left, lies prone behind it, and reports UP.

4-32. PRONE POSITION

Machine gun crew drill, as it is described in the preceding paragraphs, is an excellent training vehicle for the machine gun crew. A continuation or second phase of the crew drill is outlined in this paragraph. It should be used only as a technique for adding realism to training.

a. **Inspecting Equipment Before Firing**. The inspection of equipment for crew drill from the prone position is the same as that for bipod training and tripod training.

b. **Placing the Machine Gun Into Action**. The leader commands and signals MACHINE GUN TO BE MOUNTED HERE, FRONT, ACTION in the same manner as for bipod training. The procedures for bipod training are the same with one exception—crew members do not get to their feet and movements are executed in the low crawl. Once in position, all actions are performed from the prone position.

c. **Training With the Tripod**. Upon the command ACTION, the ammunition bearer crawls forward to the designated position and extends the front leg of the tripod. Grasping the rear legs firmly, he emplaces the front leg. Applying downward pressure, he emplaces the rear legs. He then crawls to a position about 10-meters to the left of the machine gun and gets into a good firing position with his rifle.

(1) The assistant gunner crawls forward, timing his movement to arrive as the ammunition bearer leaves. Positioning himself on the left side and facing the tripod, he

places the spare barrel case alongside the tripod, unzips the case, and removes the spare barrel and mounting equipment.

(2) The procedures for mounting the machine gun on the tripod remain the same except all are performed in a prone position and all movements are in the low crawl.

d. **Taking the Machine Gun Out of Action**. The procedures for taking the machine gun out of action remain the same except all are performed in a prone position and all movements are in the low crawl.

Section IV. BASIC GUNNERY

In basic marksmanship, the gunner applies the fundamentals in live-fire exercises during day and night. This includes 10-meter zeroing, 10-meter firing, field zeroing, transition firing, and record firing.

4-33. ZERO

Zeroing aligns the sights with the barrel so that the point of aim equals the point of impact. Ten-meter zeroing is for conducting 10-meter fire only and has no further application. (Zeroing at range or field zeroing is the gunner's battlesight zero and must be recorded.) Remember to zero both barrels of the machine gun.

a. **10-Meter Zero, Set the Sights (Mechanical Zero).** The gunner indexes or places the range scale on a range of 500 meters. He assumes a prone position and sights on the target.

b. **Three-Round Group**. The gunner fires three single rounds loaded individually at the center base of the aiming points on the basic machine gun marksmanship target. He fires the three rounds without making any adjustments to the sights. The shot group must be about a 4-cm circle or smaller to establish the center of the group in relation to the center base of the aiming paster.

c. **Grid Square Overlay**. For a more accurate adjustment, the gunner moves downrange and places the grid square overlay over pasters 1 and 2. He ensures that he aligns the overlay with the pasters and squares.

(1) Counts the number of squares it will take to move the shot group to the aiming paster.

(2) Upon completion, returns to the firing line to make corrections to the weapon. (Figure 4-21 illustrates a zero group size on which adjustments can be made and a group that is too loose for adjustments [bipod mode].) If a group is too loose, the gunner checks his position and group.

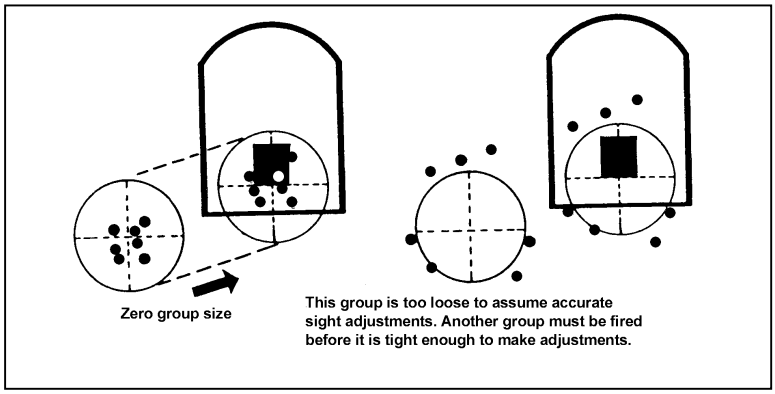

Figure 4-21. Zero group size.

d. **Windage Correction**. If the center of the group is to the left or right of the black aiming paster, the gunner must correct for windage.

e. **Elevation Correction**. If the center of the shot group is above or below of the black aiming paster, the gunner must correct for elevation.

f. **Confirmation**. The gunner fires another three-shot group (loaded singly) after making his corrections for windage and elevation. If the center of the group is still off the aiming point, he adjusts further until the group is centered on the point of aim.

g. **Recording of Zero**. There is no reason to record the 10-meter zero, because it applies only to firing at the 10-meter basic machine gun target.

NOTE: Remember to zero both barrels.

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

4-34. FIELD ZERO

A gunner must know how to zero the machine gun at distance. He should select a known distance target between 300 and 700 meters. As the range increases, it becomes more difficult to determine where the center of the beaten zone is in relation to the target. Therefore, the 500-meter target on the transition range is recommended because of the ease of determining adjustments.

a. **Setting of the Sights**. The gunner uses the same procedures as for 10-meter zeroing except that he places the rear sight on the range to the target. The recommended range is 500 meters.

b. **Burst**. Fire a burst of 5 to 7 rounds for the M249 or 7 to 9 for the M60/M240B. The gunner assumes a good stable position and fires bursts of 5 to 7 rounds for the M249 or 7 to 9 for the M60/M240B at the center base of the target and notes where the burst strikes.

c. **Correction for Windage**. If the center of the beaten zone is to the left or right of the target, he corrects for windage. He adjusts the windage accordingly.

d. **Correction for Elevation**. If the center of the beaten zone is high or low in relation to the target, he corrects for elevation. Because determining that relationship is difficult, the gunner relies on trial and error to gain sufficient experience in making reliable estimates. He makes corrections in the same manner as 10-meter zeroing.

e. **Confirmation**. After making corrections for windage and elevation, the gunner fires confirming bursts of 5 to 7 rounds for the M249 or 7 to 9 rounds for the M60/M240B. If the target is not hit, he repeats the procedures.

f. **Recording of Zero**. Upon confirming the zero, the gunner records it by counting the number of clicks he moved the sight for windage and elevation from the initial setting.

4-35. 10-METER FIRING

The 10-meter firing trains the gunner to apply the fundamentals of machine gun marksmanship in live-fire exercises. It familiarizes the soldier with the weapon's characteristics, noise, and recoil. It instills in the soldier confidence in his weapon. Each gunner learns to zero his machine gun, conducts crew drill, controlled-burst fire at point targets, and uses traverse and search techniques of fire at area targets. The 10-meter firing is conducted on a 10-meter range or a multipurpose range using the basic machine gun target. These exercises are fired with the machine gun on the bipod from both the prone position and the fighting position and with the tripod from prone and fighting positions. The 10-meter firing exercises are for practice as well as part of record qualification. All 10-meter firing exercises are recorded and scored to provide the gunner an assessment of his performance. The 10-meter firing is conducted IAW Firing Table I (Table 4-2, page 4-42). There are ten tasks.

a. **Task 1—Zero Bipod.** The gunner fires single shots to determine his weapon's zero for 10 meters. This task reinforces the dry-fire experience and allows the gunner to practice loading, while providing the most accurate and tight shot group obtainable. (A1 and A2)

b. **Task 2—Controlled-Burst Fire Bipod Fixed**. Using point targets, the gunner fires bursts of 5 to 7 rounds for the M249 or 7 to 9 rounds for the M60/M240B. This task exposes the gunner to automatic fire and the action of the weapon and at the same time introduces trigger control. (A3 and A4)

c. **Task 3—Controlled-Burst Fire Bipod Fixed**. This task requires the gunner to make body position to engage area targets in depth, to use controlled-burst firing, and to use a series of aiming points to disburse fire across the target. (A5 and A6)

d. **Task 4—Controlled-Burst Fire Bipod Fixed**. This task requires the gunner to make position changes to engage linear targets with depth, to use controlled-burst firing, and to use a series of aiming points to disburse fire across the target. (A7 and A8)

e. **Task 5—Zero Tripod**. The gunner fires single shots to determine his weapon's zero for 10 meters. This task reinforces the dry-fire experience and allows the gunner to practice loading, while providing the most accurate and tight shot group obtainable. (B1 and B2)

f. **Task 6—Controlled-Burst Fire Tripod**. Using point targets, the gunner fires bursts of 5 to 7 rounds for the M249 or 7 to 9 rounds for the M60/M240B. This task exposes the gunner to automatic fire and the action of the weapon and at the same time introduces trigger control. (B1 through B4)

g. **Task 7—Traverse and Search Fire.** This task requires the gunner to make position changes or manipulate the T&E mechanism to engage linear targets with depth, to use controlled-burst firing, and to use a series of aiming points to disburse fire across the target. (B7 through B8)

h. **Task 8—Traverse and Search Fire**. This task requires the gunner to make body position changes or manipulate the T&E mechanism to engage area targets in depth, to

use controlled-burst firing, and to use a series of aiming points to disburse fire across the target, while wearing a protective mask and gloves. (B5 through B6)

i. **Task 9—Search and Traverse Fire Qualification**. This task requires the gunner to make position changes or manipulate the T&E mechanism to engage area targets in depth during timed conditions. (C5 through C6)

j. **Task 10—Traverse and Search Fire Qualification**. This task requires the gunner to engage area targets with width and depth, while making position changes or manipulating the T&E mechanism during timed conditions. (C7 through C8)

4-36. 10-METER CONDUCT OF FIRE

The gunners are instructed on the objectives and fundamentals of firing from the bipod and tripod-supported prone or fighting positions, on fire commands used on the basic range, on the basic machine gun marksmanship target, and on analyzing and scoring the target. The unit is organized in firing orders based on range constraints. Each firing order should consist of a gunner and an assistant gunner. The assistant gunner assists the gunner during prefire checks and zeroing. The assistant gunner also relays signals to the tower operator, checks the gunner's position, and assists him. During qualification, an assistant gunner is not used. The ten tasks are fired in the following manner:

a. **Task 1—Bipod, Zero.**

(1) The tower operator gives the command MACHINE GUN TO BE MOUNTED HERE (weapon squad leader’s pointing to the firing points on the 10-meter line), FRONT (weapon squad leader’s pointing to the 10-meter targets), ACTION.

(2) At the command ACTION the machine gun crew conducts, placing the machine gun into action (bipod mode)

(3) The gunner prepares the rear sight for zeroing and checks the front sight.

(4) The gunner assumes a good position.

(5) The tower operator instructs the gunner to prepare a single round.

(6) The following fire command is given. The gunner and assistant gunner repeat each element of the fire command as it is given.

FIRE MISSION (The gunner loads and moves the safety to “F”.)
FRONT (The gunner focuses on the target or target area.)
PASTER A ONE (The gunner locates target.)
FIVE HUNDRED (The gunner adjusts sights and acquires the sight picture.)
FIXED, ONE ROUND (The gunner is given the method of fire.)
COMMENCE FIRING (The gunner fires on command from tower operator, but when ready.)

NOTE: Throughout all firing exercises, the gunner performs the appropriate tasks during each element of the fire command. The number of rounds fired is used instead of the rate for METHOD OF FIRE. This is for control. (Omitting the rate specifies RAPID fire, which is not desirable for the tasks.)

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

(7) The gunner loads one round, obtains the proper sight picture, and gives an UP to the assistant gunner.

(8) The assistant gunner relays the READY signal to the tower operator.

(9) The tower operator gives the command COMMENCE FIRING.

(10) The gunner engages paster A1 with three-single shots when he is ready.

(11) The gunner moves downrange to observe, mark, and triangulate the shot group. He makes adjustments as needed.

(12) Steps 3 through 10 are repeated, but the gunner fires at paster A2 firing a single round, then he adjusts.

NOTE: If the gunner should zero his weapon using 9 rounds, he uses the remaining 3 rounds to confirm his zero. If he is unable to zero with 12 rounds, he is removed from the firing line for remedial training.

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

b. **Task 2—Bipod, Controlled-Burst Fire, Fixed.**

(1) The tower operator instructs the gunner to prepare two 7-round belts (M249) or two 9-round belts (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
PASTER A THREE
FIVE HUNDRED
FIXED, FIVE- TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B).
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner fires the first burst of 5 to 7 rounds (M249) or 7 to 9 rounds (M60/M240B) at paster A3.

(7) Steps 2 through 6 are repeated, but the gunner fires at paster A4.

c. **Task 3—Bipod, Controlled-Burst Fire, Fixed.**

(1) The tower operator instructs the gunner to prepare a 14-round belt (M249) or 18-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
PASTER A FIVE
FIVE HUNDRED
TRAVERSE AND SEARCH, FIVE- TO SEVEN-ROUND BURSTS (M249) OR SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner fires the first burst of 5 to 7 (M249) OR 7 TO 9 (M60/M240B) rounds at paster A5.

(7) Steps 2 through 6 are repeated, but the gunner fires at paster A6.

d. **Task 4—Bipod, Controlled-Burst Fire, Fixed.**

(1) The tower operator instructs the gunner to prepare 14-round belt (M249) or 18-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
PASTER A SEVEN
FIVE HUNDRED
TRAVERSE AND SEARCH, FIVE- TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner fires the first burst of 5 to 7 rounds (M249) or 7 to 9 rounds (M60/M240B) at paster A7.

(7) Steps 2 through 6 are repeated, but the gunner fires at paster A8.

(8) The gunner and assistant gunner moves downrange to observe and analyze his target and shot groups.

(9) The Tower operator gives the following command when the gunner and assistant gunner return from downrange. OUT OF ACTION.

(10) At the command OUT OF ACTION the machine gun crew conducts, taking the machine gun out of action (bipod mode)

e. **Task 5—Tripod, Zero.** If the gunner should zero his weapon in 9 rounds, he uses the remaining 3 rounds to confirm his zero. If he is unable to zero in 12 rounds, he is removed from the firing line for remedial training.

(1) The tower operator gives the command MACHINE GUN TO BE MOUNTED HERE (weapon squad leaders point to the firing points on the 10-meter line), FRONT (weapon squad leader points to the 10-meter targets), ACTION.

(2) At the command ACTION the machine gun crew conducts, placing the machine gun into action (tripod mode)

(3) The gunner prepares the rear sight for zeroing and checks the front sight.

(4) The gunner assumes a good tripod position.

(5) The tower operator instructs the gunner to prepare a single round.

(6) The following fire command is given. The gunner and assistant gunner repeat each element of the fire command as it is given.

FIRE MISSION (The gunner loads and moves the safety to “F”.)
FRONT (The gunner focuses on the target or target area.)
PASTER B ONE (The gunner locates target.)
FIVE HUNDRED (The gunner adjusts sights and acquires the sight picture.)
FIXED, ONE ROUND (The gunner is given the method of fire.)
COMMENCE FIRING (The gunner fires on command from tower operator, but when ready.)

(7) The gunner loads one round, obtains the proper sight picture, and gives an UP to the assistant gunner.

(8) The assistant gunner relays the READY signal to the tower operator.

(9) The tower operator gives the command COMMENCE FIRING.

(10) The gunner engages paster B1 with three single shots when he is ready.

(11) The gunner moves downrange to observe, mark, and triangulate the shot group. He makes adjustments as needed.

(12) Steps 3 through 10 are repeated, but the gunner fires at paster B2 firing a single round, then he adjusts.

f. **Task 6—Tripod, Controlled-Burst Fire, Traverse**.

(1) The tower operator instructs the gunner to prepare a 28-round belt (M249) or 36-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
PASTERS B ONE THROUGH B FOUR
FIVE HUNDRED
FIXED, FIVE TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner engages pasters B1 through B4, firing 5- to 7-round bursts (M249) or 7 to 9 round bursts (M60/M240B) at each paster, using traverse technique.

g. **Task 7—Tripod, Controlled-Burst Fire, Traverse and Search**.

(1) The tower operator instructs the gunner to prepare a 56-round belt (M249) or 63-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
PASTERS B SEVEN THROUGH B EIGHT
FIVE HUNDRED
TRAVERSE AND SEARCH, FIVE- TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner engages pasters B7 through B8, firing a 5- to 7-round bursts or 7- to 9-round bursts at each paster, using traverse and search technique.

h. **Task 8—Tripod, Controlled-Burst Fire, Search and Traverse.**

(1) The tower operator instructs the assistant gunner to prepare a 35-round belt (M249) or 45-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given

FIRE MISSION
FRONT
PASTERS B FIVE THROUGH B SIX
FIVE HUNDRED
TRAVERSE AND SEARCH, FIVE- TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner engages pasters B5 through B6, firing a three round burst at each paster, using search and traverse technique.

(7) The gunner and assistant gunner moves downrange to observe and analyze his targets.

i. **Task 9—Tripod, Qualification, Search and Traverse Fire.** On completion of all firing, the firing line is cleared and the instructors or safeties move downrange and score the targets. The firer will not score his own target.

(1) The tower operator instructs the assistant gunner to prepare a 35-round belt (M249) or 45-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given

FIRE MISSION
FRONT
PASTERS C FIVE THROUGH C SIX
FIVE HUNDRED
TRAVERSE AND SEARCH, FIVE- TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner engages pasters B5 through B6, firing a 5- to 7- round bursts (M249) or 7- to 9-round bursts (M60/M240B) at each paster, using search and traverse technique. The gunner has 30 seconds to engage as many pasters as he can during the time allowed.

j. **Task 10—Tripod, Qualification, Traverse and Search.** On completion of all firing, the firing line is cleared and the instructors or safeties move downrange and score the targets. The firer will not score his own target.

(1) The tower operator instructs the gunner to prepare a 56-round belt (M249) or 72-round belt (M60/M240B).

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
PASTERS C SEVEN THROUGH C EIGHT
HUNDRED
TRAVERSE AND SEARCH, FIVE- TO SEVEN-ROUND BURSTS (M249) or SEVEN- TO NINE-ROUND BURSTS (M60/M240B)
AT MY COMMAND

(3) The gunner acquires the proper sight picture and gives an UP to the assistant gunner.

(4) The assistant gunner relays the READY signal to the tower operator.

(5) The tower operator gives the command to FIRE.

(6) The gunner engages pasters C7 through C8, firing 5- to 7-round bursts (M249) or 7- to 9-round bursts (M60/M240B) at each paster, using traverse and search technique. The gunner has 45 seconds to engage as many pasters as he can during the time allowed.

(7) The tower operator gives the following command when the gunner and assistant gunner return from downrange. OUT OF ACTION.

(8) At the command OUT OF ACTION the machine gun crew conducts, taking the machine gun out of action (tripod mode)

BASIC (10-METER) FIRE PRONE OR FIGHTING POSITION, BIPOD OR TRIPOD, PRACTICE AND QUALIFICATION						
TASK	**TIME**	**RDS M249**	**RDS M60/ M240B**	**TYPE**	**TARGET**	**TYPE FIRE**
1	No limit	12	12	Ball	Pasters A1 and A2	12 single rd (zero).
2	No limit	14	18	Ball	Pasters A3 and A4	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
3	No limit	14	18	Ball	Pasters A5 and A6	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
4	No limit	14	18	Ball	Pasters A7 and A8	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
5	No limit	12	12	Ball	Pasters B1 and B2	12 single rd (zero).
6	No limit	28	36	Ball	Pasters B1 thru B4	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
7	No limit	56	72	Ball	Pasters B7 thru B8	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster traverse and search.
8	No limit	35	45	Ball	Pasters B5 thru B6	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
*9	30 seconds	35	45	Ball	Pasters C5 thru C6	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
*10	45 seconds	56	72	Ball	Pasters C7 thru C8	5- to 7-rd bursts (M249) or 7- to 9-rd bursts (M60/ M240B) for each paster.
NOTE: The unit commander determines the position to be used. A summary of the ammunition requirements is on page 4-54. ***Indicates qualification tasks.						

Table 4-2. Firing Table I—Basic (10-meter) fire.

WARNING

The M240B is carried loaded with the bolt locked to the *rear* in *tactical situations* where noise discipline is critical to the success of the mission. Trained gun crews are the only personnel authorized to load the M240B and only when command directs the crew to do so. During *normal training exercises*, the M240B is loaded and carried with the bolt in the *forward position*.

4-37. 10-METER FIRING, QUALIFICATION

The first phase of qualification consists of firing tasks 2 through 8 of Firing Table I for practice, and tasks 9 and 10 of Firing Table I for record. Before firing, all soldiers must be familiar with the tasks, the time allowed, the ammunition allowances, the procedures to follow in the event of a stoppage, and the penalties imposed.

a. **Time and Ammunition**. Each gunner completes zeroing before record firing. Individual fire commands are given for each task. Task 9 is fired in 30 seconds, and task 10 is fired in 45 seconds.

b. **Stoppages**. If a stoppage occurs, the gunner must apply immediate action. If the stoppage is reduced, he continues to fire the course.

(1) If a stoppage occurs that cannot be reduced by immediate action, the gunner raises his hand and awaits assistance.

(2) Once the stoppage is reduced, the gunner completes firing beginning with the next task.

(3) If a stoppage is caused by an error on the part of the gunner, additional time is not permitted. The gunner receives the score he earned before the stoppage occurred.

(4) If it is necessary to replace the machine gun, the gunner must zero the new weapon. The gunner can fire the exercise again.

(5) Gunners who cannot fire a task or cannot complete firing in the time allowed (because of malfunctions) can finish the exercise in an *alibi run* after all other gunners complete firing. They fire only those tasks they failed to engage because of the malfunction.

c. **Penalties**. Five points are deducted from the score of any gunner who fails to stop firing at the command or signal to cease fire. If a gunner fires at the wrong target or exercise, he loses the points for those rounds. A gunner whose target was fired upon by another gunner is permitted to refire the exercise.

d. **Scoring**. When scoring the 10-meter target, the trainer scores all scoring pasters (C5 through C6 and C7 through C8). One point is given for each round impacting within the scoring space. The maximum point value is 7 points (M249) or 9 points (M60/M240B) for each paster. Rounds touching the line on the paster are considered a HIT. When firing C5 though C6, the gunner engages 5 scoring pasters with 35 rounds. (M249) or 45 rounds (M60/M240B) The maximum possible is 35 points (M249) or 45 points (M60/M240B). When firing pasters C7 through C8, the gunner engages 8 scoring pasters with 56 rounds (M249) or 72 rounds (M60/M240B). The maximum possible is 56 points (M249) or 72 points (M60/M240B). Gunners do not score their own targets when firing for qualification. During qualification firing, at least 63 points (M249) or 81 points

(M60/M240B) must be achieved on Firing Table I. DA Form 85-R is used to record scores (Figure 4-23). (See paragraph 4-42).

e. **Position**. Based on his METL, the commander selects either the bipod-supported prone or fighting position for table A only. For qualification the position will be either tripod-supported prone or tripod-supported fighting position table B for practice and table C for qualification.

4-38. TRANSITION FIRE

Transition firing provides the gunner the experience necessary to progress from 10-meter firing to field firing at various types of targets at longer ranges. The gunner experiences and learns the characteristics of fire, field zeroing, and range determination, and engaging targets in a timed scenario. He uses the adjusted aiming-point method of fire adjustment. Transition firing is conducted on a machine gun transition range or the MPRC. These exercises are fired with the bipod prone or fighting position. Transition firing is fired and scored for practice and qualification to provide feedback to the gunner. Firing Table II consists of eight tasks (Table 4-3, page 4-47).

a. **Range Facilities**. The transition range should consist of several firing lanes. Each lane should be 10 meters wide at the firing line and 100 meters wide at a range of 800 meters. Ideally, each lane has a fighting position with an adjacent prone firing position.

b. **Targets** (Card board: NSN 6920-00-795-1806 and plastic: 6920-00-071-4780). The E-type silhouette targets are used—single and double are needed for qualification. The double represents an enemy automatic weapon, which for the gunner is a priority target (Figure 4-22). The targets are at various ranges that a gunner might engage. All targets should be plainly seen from the firing positions. Electrical targets are desirable.

c. **Stoppage.** The same procedures used in Firing Table I qualification firing are used (page 4-42).

d. **Penalties**. The same procedures used in Firing Table I qualification firing are used (page 4-42).

e. **Scoring**. Ten points are given for each target hit, whether hit on the first or second burst. The total possible points are 110. The gunner must hit at least 7 (70 points) targets out of 11 exposures to qualify. DA Form 85-R is used to record scores Figure 4-23 (see paragraph 4-42).

f. **Position.** Based on his METL, the commander selects either the bipod-supported prone or bipod-supported fighting position for qualification.

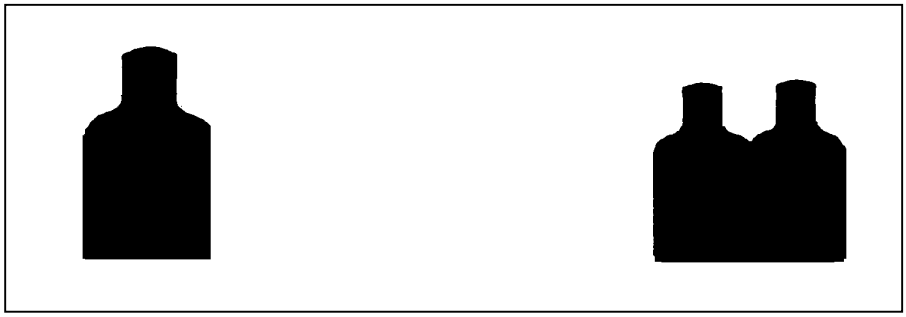

Figure 4-22. Single and double E-type silhouette targets.

4-39. TRANSITION CONDUCT OF FIRE, BIPOD

The unit is organized in firing orders based on range constraints. Each firing order should consist of a gunner and an assistant gunner. The assistant gunner assists the gunner during prefire checks and zeroing. He also relays signals to the tower operator, checks the gunner's position, and assists him during qualification in target detection and adjustments. The bipod-supported prone or fighting positions are used. The eight tasks are fired in the following manner.

a. **Task 1—Field Zero, 500-Meter, Double E-Type Silhouette.**

(1) The tower operator gives the command MACHINE GUN TO BE MOUNTED HERE (weapon squad leader's pointing to the firing points on the transition line), FRONT (weapon squad leader's pointing to the targets), ACTION.

(2) At the command ACTION the machine gun crew conducts, placing the machine gun into action (bipod mode)

(3) The gunner prepares the rear sight for field zeroing and checks the front sight blade. He sets the range to the zero target on the range scale. The preferred range is 500 meters.

(4) The gunner assumes a good position.

(5) The tower operator instructs the assistant gunner to prepare a 28-round belt (M249) or 36-round belt (M60/M240B).

(6) When the fire command is given, the gunner and assistant gunner repeat each element as it is given.

FIRE MISSION
FRONT
TARGETS: TROOPS IN THE OPEN
THREE HUNDRED
FIXED, FIVE- TO SEVEN-ROUND BURST (M249) or SEVEN- to NINE-ROUND BURST (M60/M240B)
AT MY COMMAND

(7) The gunner loads one 28-round belt of ammunition (M249) or 36-round belt of ammunition (M60/M240B), obtains the proper sight picture, and gives an UP to the assistant gunner.

(8) The assistant gunner relays the READY signal to the tower operator.

(9) The tower operator gives the command FIRE.

(10) The gunner fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) at the target when ready.

(11) The gunner observes the beaten zone. If the rounds miss the target, he makes adjustments for windage and elevation.

(12) After adjustments have been made, the gunner repeats steps 8 through 9 with the remaining rounds until rounds are impacting on the target. He records his zero.

b. **Task 2—400-Meter, Double E-Type Silhouette**.

(1) The tower operator instructs the gunner to load one 154-round belt.

(2) When the fire command is given, the gunner and assistant gunner repeat each element as it is given. It is only given once for tasks 2 through 8.

FIRE MISSION
FRONT
TARGET: TROOPS IN THE OPEN

ONE HUNDRED TO EIGHT HUNDRED METERS
FIXED, FIVE- TO SEVEN-ROUND BURST (M249) or SEVEN- TO NINE-ROUND BURST (M60/M240B)
AT MY COMMAND

(3) The gunner gives an UP to the assistant gunner.

(4) The assistant gunner gives the READY signal to the tower operator.

(5) The tower operator gives the command FIRE.

(6) The gunner scans the sector.

(7) A 400-meter, double E-type target is exposed for 10 seconds.

(8) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains the correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B).

(9) If the gunner fails to hit the target, he fires another 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) using the adjusted aiming point method of fire adjustment.

c. **Task 3—500-Meter, Double E-Type Silhouette.**

(1) The gunner and assistant gunner continues to scan the sector.

(2) A 500-meter, double E-type target is exposed for 10 seconds.

(3) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains the correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B).

(4) If the gunner fails to hit the target, he fires another 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) using the adjusted aiming point method of fire adjustment.

d. **Task 4—600-Meter, Single E-Type Silhouette.**

(1) The gunner and assistant gunner continues to scan the sector.

(2) A 600-meter, single E-type target is exposed for 20 seconds.

(3) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains the correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B).

(4) If the gunner fails to hit the target, he fires another 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) using the adjusted aiming point method of fire adjustment.

e. **Task 5—800-Meter, Single E-Type Silhouette**.

(1) The gunner and assistant gunner continues to scan the sector.

(2) A 800-meter, single E-type target is exposed for 30 seconds (total of six targets).

(3) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains the correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B).

(4) If the gunner fails to hit the target, he fires another 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) using the adjusted aiming point method of fire adjustment.

f. **Task 6—400-Meter, Single E-Type Silhouette; and 600-Meter, Double E-Type Silhouettes**.

(1) The gunner and assistant gunner continue to scan the sector.

(2) A 400-meter single E-type target and a 600-meter double E-type target are exposed for 30 seconds.

(3) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains the correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) at each target.

(4) If the gunner fails to hit the target, he fires another 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) using the adjusted aiming point method of fire adjustment at each target.

g. **Task 7—700-Meter and 800-Meter, Double E-Type Silhouettes**.

(1) The gunner and assistant gunner continue to scan the sector.

(2) A 700-meter and a 800-meter double E-type targets are exposed for 45 seconds (total of four targets at 700 meters and six targets at 800 meters).

(3) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) at each target.

(4) If the gunner fails to hit the target, he fires another 7-round burst using the adjusted aiming point method of fire adjustment at each target.

h. **Task 8—400-Meter, Single E-Type Silhouette, and 500-Meter, 600-Meter, Double E-Type Silhouettes.**

(1) The gunner and assistant gunner continue to scan the sector.

(2) The 400-meter single E-type silhouettes, and 500- and 600-meter double E-type silhouettes are exposed for 45 seconds (total of two targets at 400 meters, four targets at 500 meters, and six targets at 600 meters).

(3) The gunner determines the range, places the proper setting on the rear sight, assumes the proper position, obtains correct sight alignment and sight picture, and fires a 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) at each target.

(4) If the gunner fails to hit the target, he fires another 5- to 7-round burst (M249) or 7- to 9-round burst (M60/M240B) using the adjusted aiming point method of fire adjustment at each target.

BIPOD TRANSITION FIRE PRONE OR FIGHTING POSITION PRACTICE AND QUALIFICATION							
TASK	**TIME**	**RDS M249**	**RDS M60/ M240B**	**TYPE**	**TARGET**	**RANGE**	**TYPE FIRE**
1	No limit	28	36	X 4:1	Double E	500	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B) (field zero)
*2	5 seconds	14	18	X 4:1	Double E	400	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
*3	10 seconds	14	18	X 4:1	Double E	500	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
*4	5 seconds	14	18	X 4:1	Double E	600	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
*5	10 seconds	14	18	X 4:1	Double E	800	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
*6	20 seconds	28	36	X 4:1	Single E Double E	400 600	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
*7	20 seconds	28	36	X 4:1	Double E Double E	700 800	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
*8	25 seconds	42	54	X 4:1	Single E Double E Double E	400 500 600	Fixed, 5- to 7-rd burst (M249) or 7- to 9-rd burst (M60/M240B)
NOTE: The unit commander determines the firing position. A summary of the ammunition requirements is on page 4-53. ***Indicates qualification tasks.** **X** Indicates ball and tracer 4:1 mix.							

Table 4-3. Firing Table II—Bipod transition fire.

4-40. TRANSITION FIRE, LIMITED VISIBILITY

Night or limited visibility firing requires the soldier to apply the fundamentals of gunner marksmanship while using nightsights. This training instills confidence in the machine gunner. Each soldier learns how to engage targets using nightsight. He learns to mount the sight, boresight the weapon at 10-meters, and zero the aided vision devices (IAW Appendix G for that device) at 10-meters using a 10-meter (M16A2) zero target. Finally, he learns to detect and engage a series of undetermined targets at various ranges with the

aided vision device. Night firing exercises can be conducted during daylight with the AN/PVS-4 when the daylight cover is used. These exercises are for instructional, practice and qualification purposes. The commander can use this training to assess his unit's METL. Night firing is conducted on the same 10-meter range and transition range or a multipurpose machine gun range used for Firing Tables I and II. The tasks and conduct of fire in Firing Table III are the same as in Firing Table II. Therefore, a conduct of fire is not necessary.

a. **Time and Ammunition**. Table 4-4, Firing Table III (page 4-51) outlines ammunition requirements.

b. **Stoppage**. The same procedures that are used in Firing Table II, page 4-49.

c. **Penalties**. No penalties are used.

d. **Scoring.** No points are given when the target is hit on the first or second hit, only a hit or miss. The gunner must hit 6 out of 11 targets in order to be a qualified gunner. The gunner must have qualified on both the 10-meter and transition in order to advance to this step. DA Form 85-R, provided in the back of this manual, can be used to record the number of hits.

e. **Conditions**. Table 4-3, Firing Table III is used for engaging targets out to 400 meters under ideal moonlight or during daylight conditions. If visibility is limited because of a lack of ambient light, commanders may use field-expedient means to identify targets.

NOTE: The commander may lower the ranges by 100 meters when the ambient conditions do not allow the gunners to engage targets at extended ranges.

f. **Targets**. Single E-type silhouette targets and double E-type silhouette targets are used.

g. **Position**. Based on his METL, the commander selects either the bipod-supported prone position or bipod-supported fighting position.

h. **Conduct of Fire.** Limited visibility is the same as Firing Table II. The only difference is time and distance of the targets to be engaged and firing the scanning, walking and IR discipline exercise.

4-41. AN/PVS-4 ZERO

Refer to Appendix G and the appropriate TM for this piece of equipment.

CAUTION

When mounting the AN/PVS-4 to the mounting bracket, make sure the hole for the screw in the AN/PVS-4 is aligned and flush against the bracket screw. If not, it will strip the threads on the screw, and the AN/PVS-4 cannot be used with the M249 machine gun.

TRANSITION FIRE, LIMITED VISIBILITY						
TASK	**TIME**	**RDS M249**	**RDS M60/ M240B**	**TYPE**	**TARGET**	**TYPE FIRE**
1	No limit	6	6	X 4:1	25-meter zero at 10 meters	6-single rounds
2	No limit	18	18	X 4:1	25-meter zero at 10 meters	18-single rounds
3	No limit	28	36	X 4:1	500	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*4	10 seconds	14	18	X 4:1	200	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*5	15 seconds	14	18	X 4:1	400	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*6	10 seconds	14	18	X 4:1	100	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*7	15 seconds	14	18	X 4:1	300	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*8	25 seconds	28	36		200 400	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*9	25 seconds	28	36		100 300	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
*10	30 seconds	42	56	X 4:1	100, 200 400	Fixed, 5- to 7- rd bursts (M249) or 7- to 9-rd bursts (M60/M240B)
NOTE: The unit commander determines the position to be used. A summary of the ammunition requirements is on page 4-53.						
* Indicates qualification tasks.					**X** Indicates ball and tracer 4:1 mix	

Table 4-4. Firing Table III—Transition fire, limited visibility.

4-42. QUALIFICATION STANDARDS

Qualification with the M249, M60/M240B machine gun consists of achieving the minimum standards for 10-meter day and transition day firing tables. One point is allowed for each round impacting within the scoring space (maximum of 7 points [M249] or 9 points [M60/M240B] for each space) for Firing Table I. For Firing Table II, 7 points (M249) or 9 points (M60/M240B) are allowed for each target hit whether the target is hit on the first or second burst. For Firing Table III, place an X in the hit column and place an O in the miss column. The maximum possible score for Firing Table I is 91 points (M249), 117 points (M60/M240B). A minimum of 63 points (M249), 81 points (M60/M240B) is required. The maximum score for Firing Table II is 110 points; at least

70 points must be scored on this table to qualify. The maximum possible score for Firing Table III is 11 hits. A minimum of 7 hits is required. The combined minimum total score is 133 (M249), 151 (M240B); the combined maximum total score is 201 points (M249), 227 points (M240B). The overall ratings are as follows:

	M249	M60/M240B
EXPERT	182 to 201	206 to 227
GUNNER lst CLASS	158 to 181	180 to 205
GUNNER 2nd CLASS	133 to 157	151 to 179
UNQUALIFIED	0 to 132	0 to 150

The trainer uses DA Form 85-R (Scorecard for M249, M60/M240B Machine Gun) for recording the gunner's performance on the machine gun qualification range. The instructions for completing the scorecard are on its reverse side. For an example of a completed form, see Figure 4-23. A blank locally reproducible form is in the back of this manual. The instructions are on the back of the form explaining how to fill out the form:

Use the following procedures to fill out the M249, M60/M240B scorecard:

1. **NAME:** Enter the gunner's last name, first name, middle initial, and rank.

2. **SSN:** Enter the gunner's social security number.

3. **UNIT:** Enter the gunner's unit designation.

4. **DATE:** Enter the date of firing.

5. **LANE:** Enter the lane number for the gunner's firing point.

6. **RECORD:** Tasks used for record and qualification are Firing Table I, tasks 9 through 10; Firing Table II, tasks 2 through 8; and Firing Table III, tasks 4 through 10.

7. **HIT/MISS:** For Table I, tasks 9 through 10, enter the number of rounds impacting within target spaces (maximum of 7 [M249] or 9 [M60/M240B] per space). For Table II, tasks 2 through 8, and Table III, tasks 4 through 10, enter an X for a hit and an O for a miss (regardless of whether the target is hit on the first or second burst).

8. **TOTAL HITS/ POINTS:** For Table I, tasks 9 through 10, give 1 point for each round impacting within a scoring space.
For Table II, tasks 2 through 8, give 10 points for each target hit.
For Table III, tasks 4 through 10, enter the number of targets hit (no points awarded).

9. **TOTAL SCORE:** Add points from Tables IV and V. Use the following qualification levels*:

	M249	M60/M240B
EXPERT GUNNER	182-201	206-227
GUNNER 1ST CLASS	158-181	180-205
GUNNER 2D CLASS	133-157	151-179
UNQUALIFIED	0-132	0-150

* The gunner must score 63 points (M249), 81 points (M60/M240B) on Table I, 70 points on Table II, and 6 hits on Table III to meet the minimum score for each.

The following is a summary of ammunition required:

	M249	M60/M240B	TYPE
Table I, Practice	185	231	Ball
Table I, Record	91	117	X4:1
Table II, Practice	182	236	X4:1
Table II, Record	154	200	X4:1
Table III, Practice	360	460	X4:1
Table III, Record	154	200	X4:1

NOTE: See DA Pam 350-38 for STRAC ammunition requirements.

SCORECARD FOR M249, M60/M240B MACHINE GUNS

For use of this form, see FM 3-22.68; the proponent agency is TRADOC.
See back of this form for instructions.

PRIVACY ACT STATEMENT

AUTHORITY: 10 USC 30129(g) Executive Order 9397.

PRINCIPAL PURPOSE: Records individual's performance on record fire range.

ROUTINE USES: Evaluate individual's proficiency and basis for determination of award of proficiency badge; SSN is used for positive identification purposes only.

DISCLOSURE: Voluntary, individuals not providing information cannot be rated/scored on a mass basis.

NAME	SSN	UNIT	DATE (YYYYMMDD)	LANE
PVT DAVID JONES	123-45-6789	C Co, 2/45TH IN	12 DEC 02	3

TABLE I (10-METERS)

TASK	RANGE (meters)	TIME	HITS
1*	10	N/A	N/A
2*	10	N/A	N/A
3*	10	N/A	N/A
4*	10	N/A	N/A
5*	10	N/A	N/A
6*	10	N/A	N/A
7*	10	N/A	N/A
8*	10	N/A	N/A
9	10	40 SEC	30
10	10	50 SEC	52
TOTAL HITS (POINTS)			82

TABLE II (DAY TRANSITION)

TASK	RANGE (meters)	TIME	*PRACTICE HIT	*PRACTICE MISS	**QUALIFY HIT	**QUALIFY MISS
1*	500	N/A	N/A	N/A	N/A	N/A
2**	400	10 SEC	X		X	
3**	500	15 SEC	X		X	
4**	600	20 SEC		O	X	
5**	800	30 SEC	X			O
6**	400	30 SEC	X		X	
	600		X		X	
7**	700	45 SEC	X		X	
	800			O	X	
8**	400	45 SEC	X		X	
	500		X		X	
	600		X		X	
**TOTAL POINTS			100			

TABLE III (LIMITED VISIBILITY)

TASK	RANGE (meters)	TIME	*PRACTICE HIT	*PRACTICE MISS	**QUALIFY HIT	**QUALIFY MISS
1*	10	N/A	N/A	N/A	N/A	N/A
2*	10	N/A	N/A	N/A	N/A	N/A
3*	500	N/A	N/A	N/A	N/A	N/A
4	200	10 SEC	X		X	
5	400	15 SEC	X			O
6	100	10 SEC		O	X	
7	300	15 SEC	X		X	
8	200	25 SEC	X		X	
	400			O	X	
9	100	25 SEC	X		X	
	300		X		X	
10	100	30 SEC	X		X	
	200		X		X	
	400			O	X	
TOTAL HITS			9			

TOTAL SCORE _____

* NONSCORED TASKS
**10 POINTS PER HIT

CHECK APPROPRIATE WEAPON

EXPERT		FIRST CLASS		SECOND CLASS	
☑ M249 182-201	☐ M60/M240B 206-227	☐ M249 158-181	☐ M60/M240B 180-205	☐ M249 158-181	☐ M60/M240B 180-205

OIC SIGNATURE	GRADER	RATING
John Smith	Paul Davis	EXPERT

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Figure 4-23. Example of a completed DA Form 85-R.